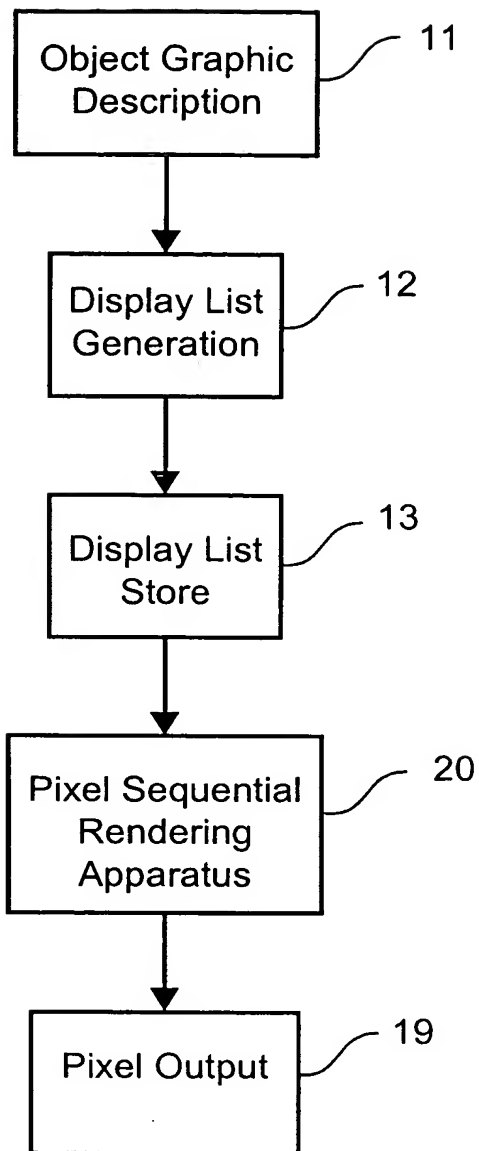
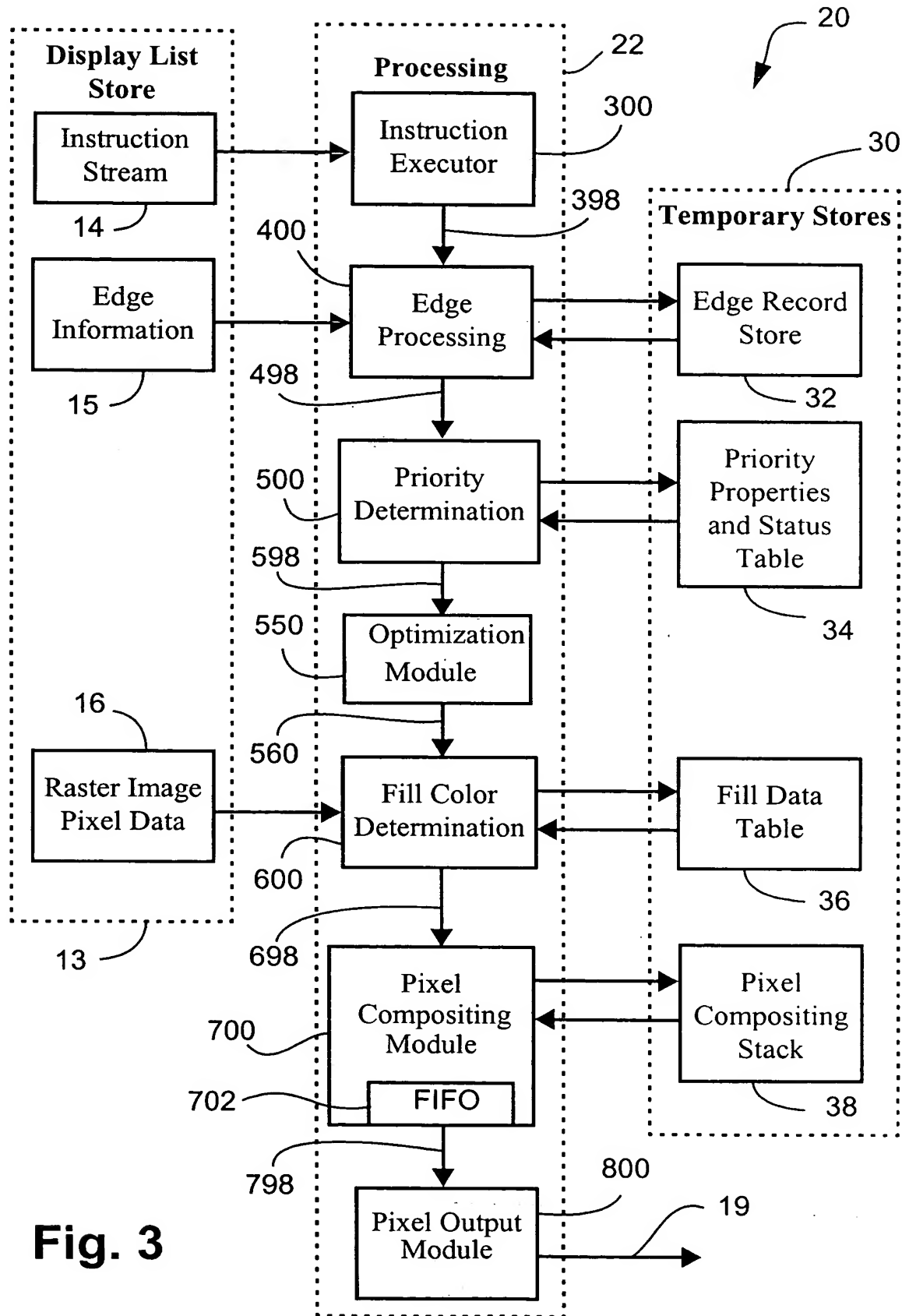
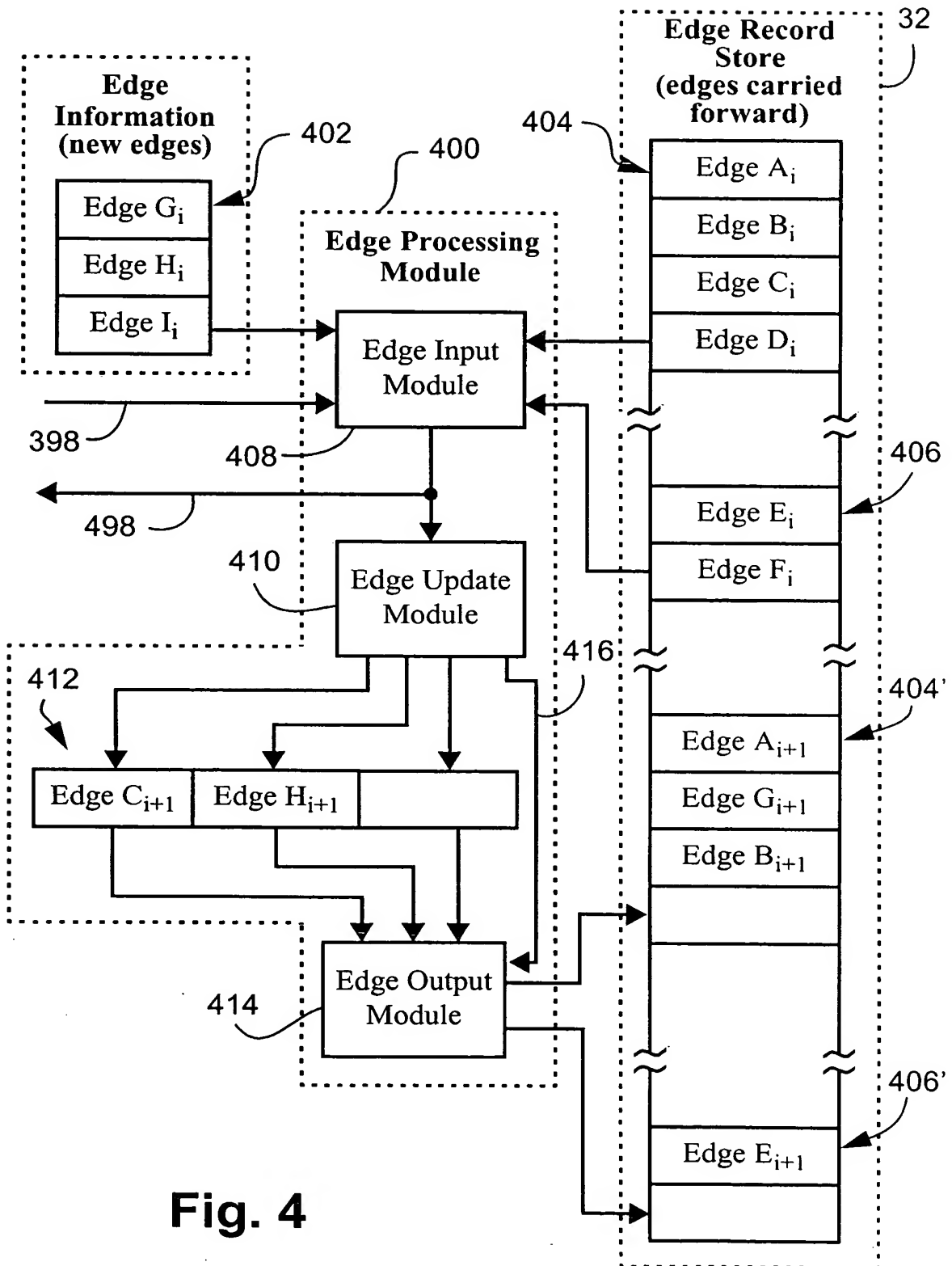
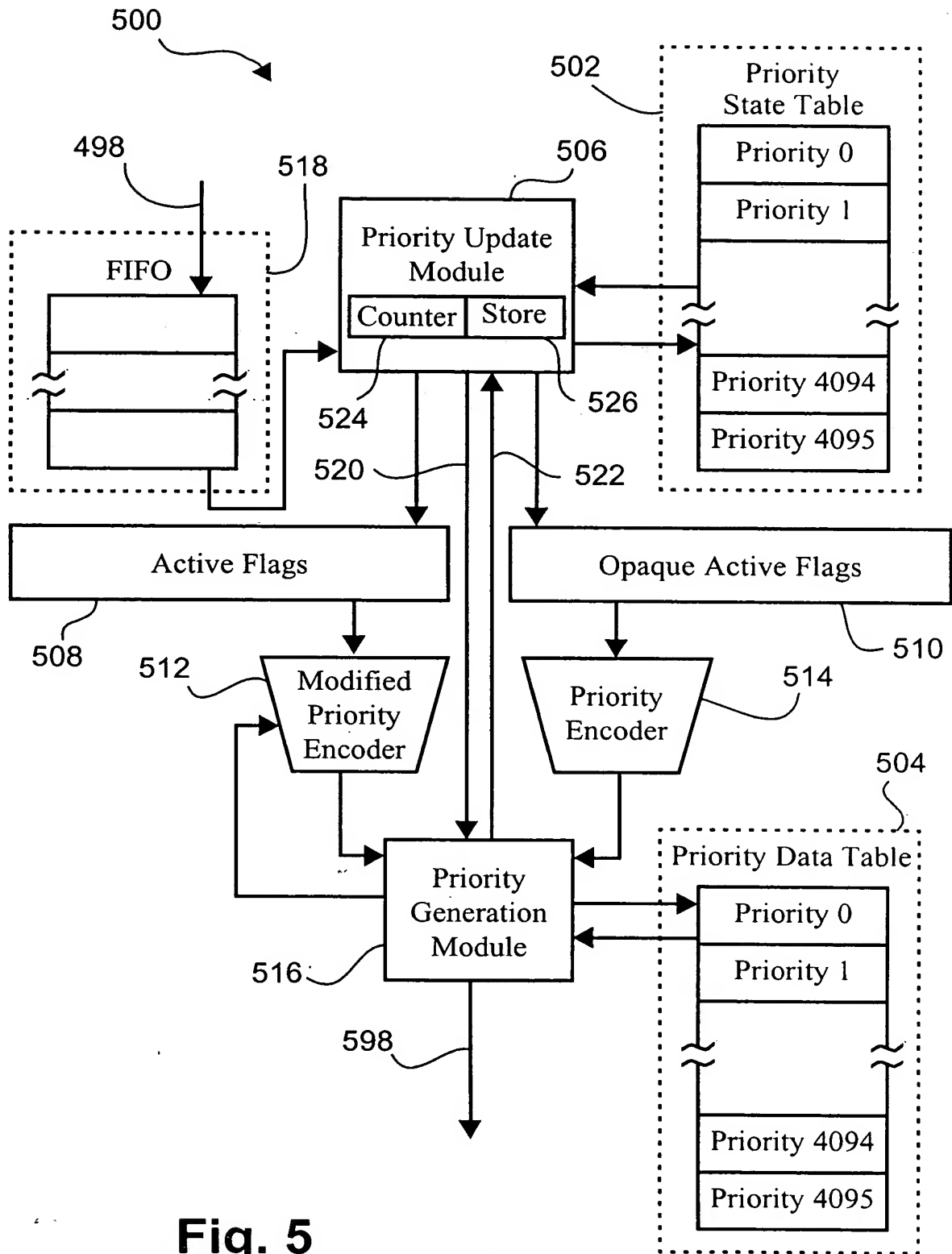
**Fig. 1**

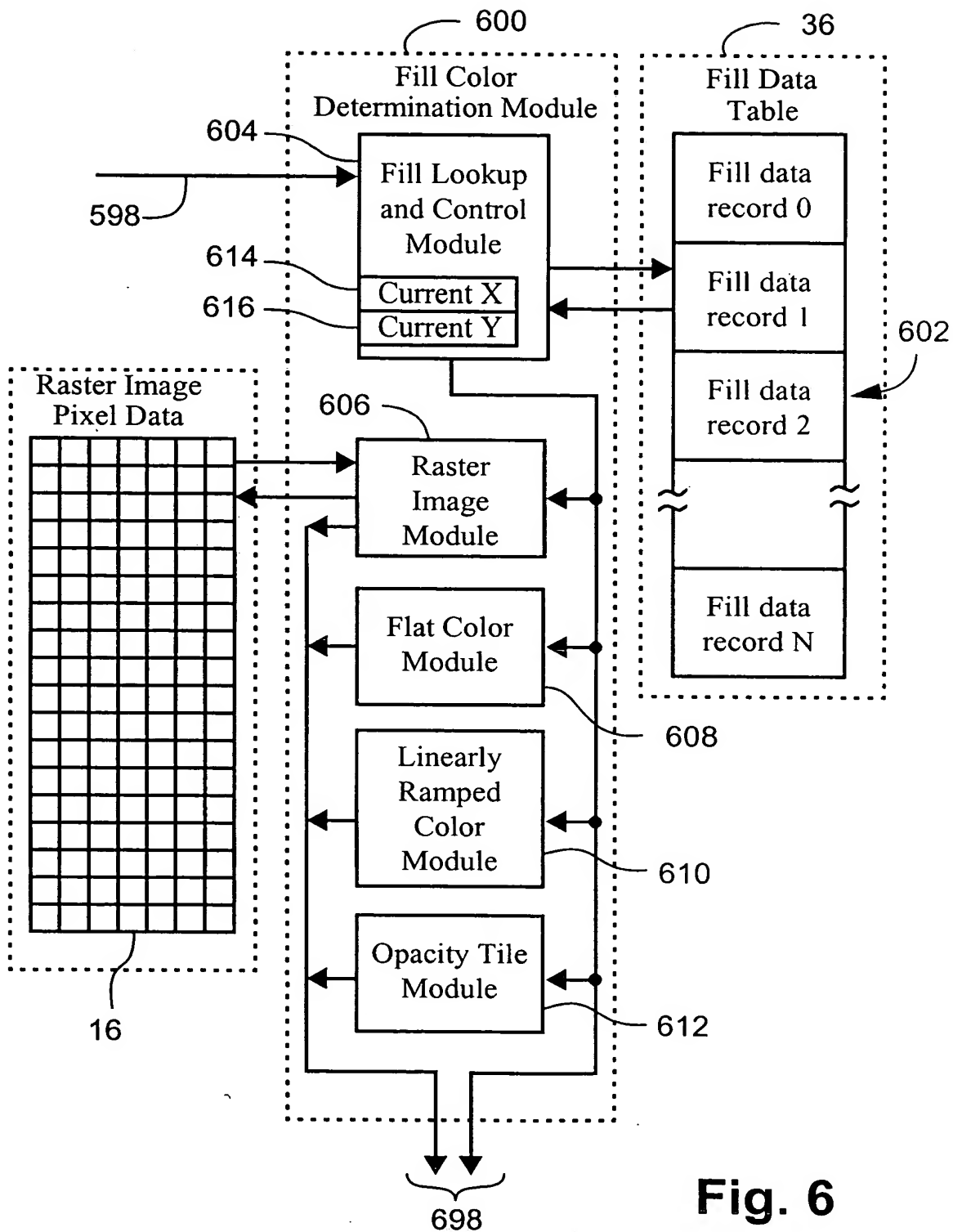
**Fig. 2**

**Fig. 3**

**Fig. 4**



**Fig. 5**

**Fig. 6**

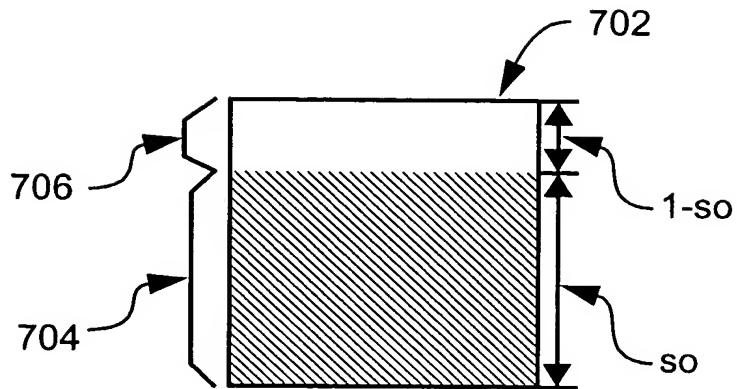
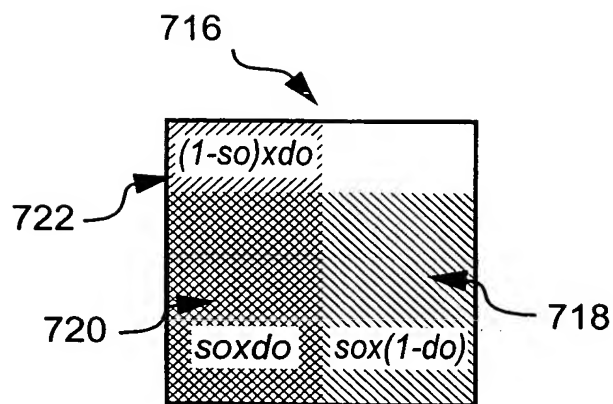
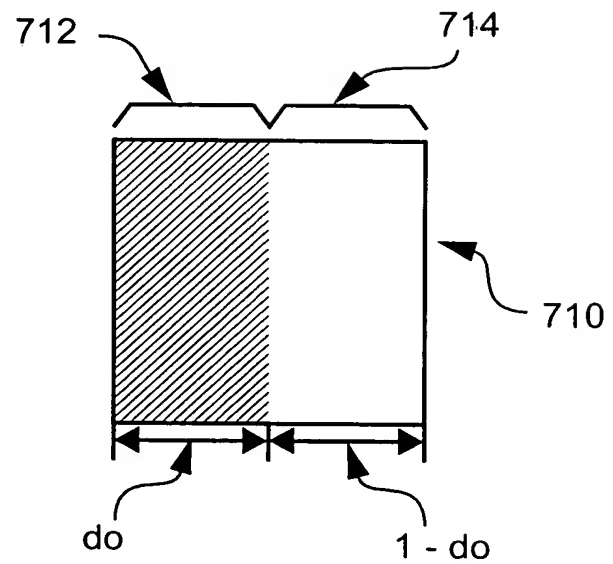


Fig. 7B



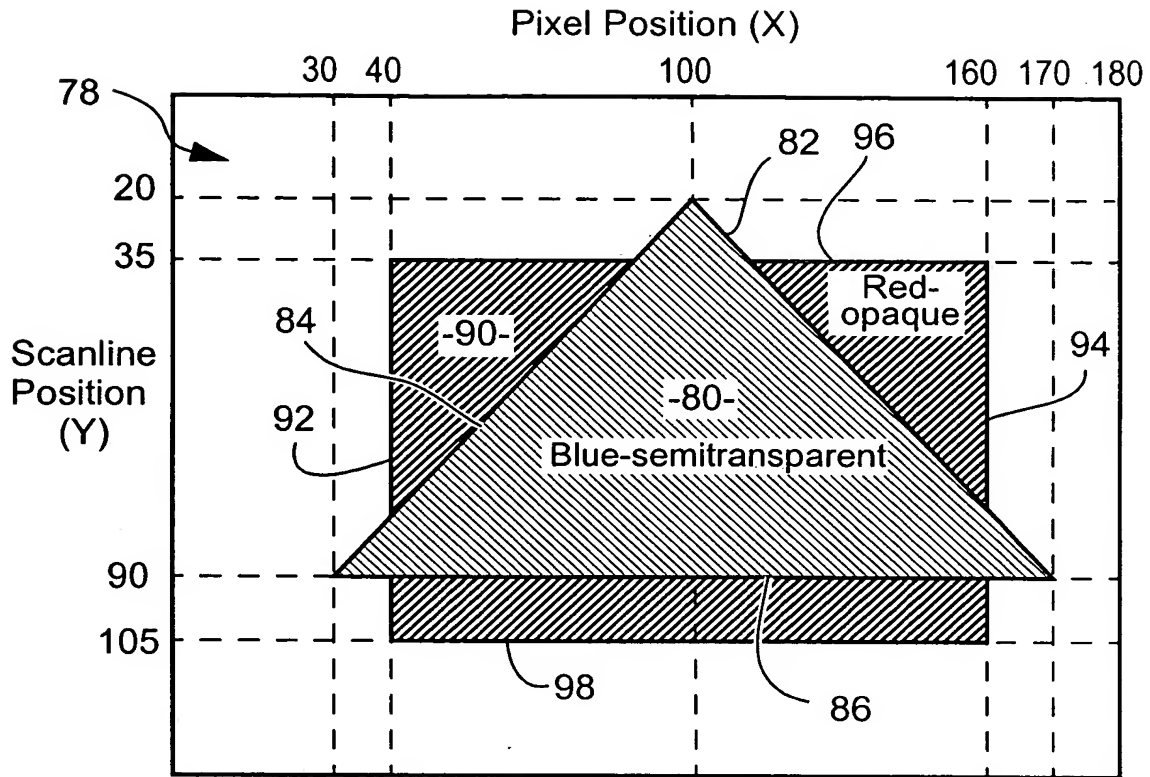
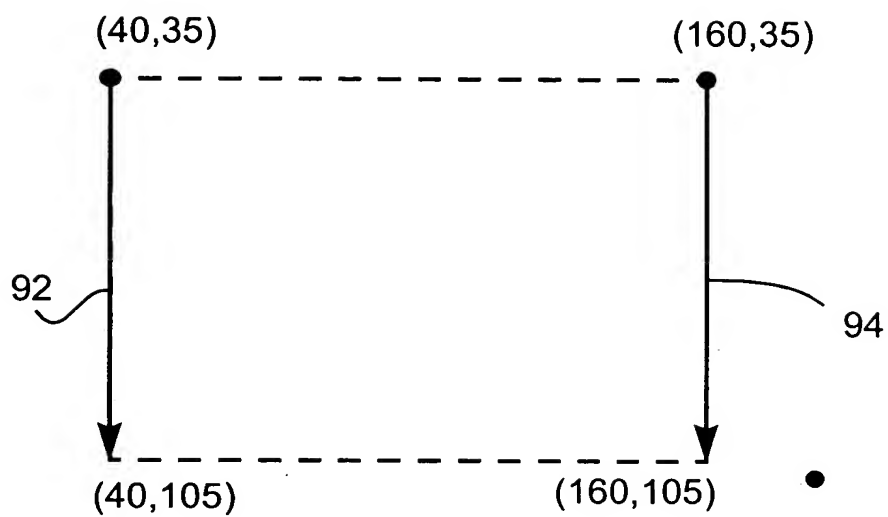
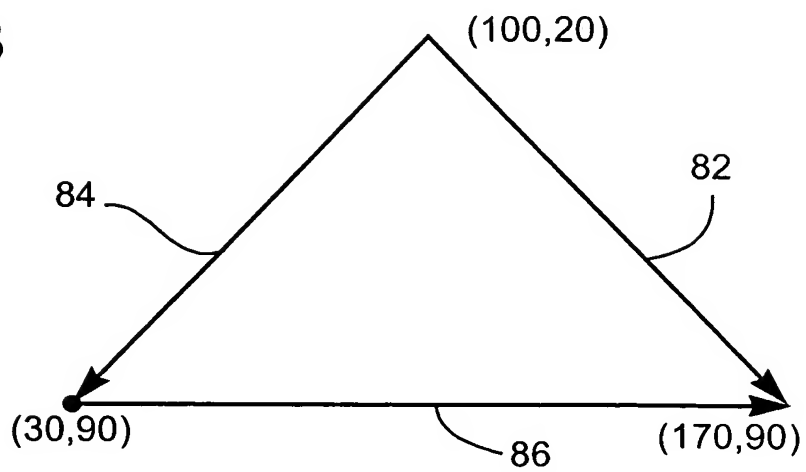


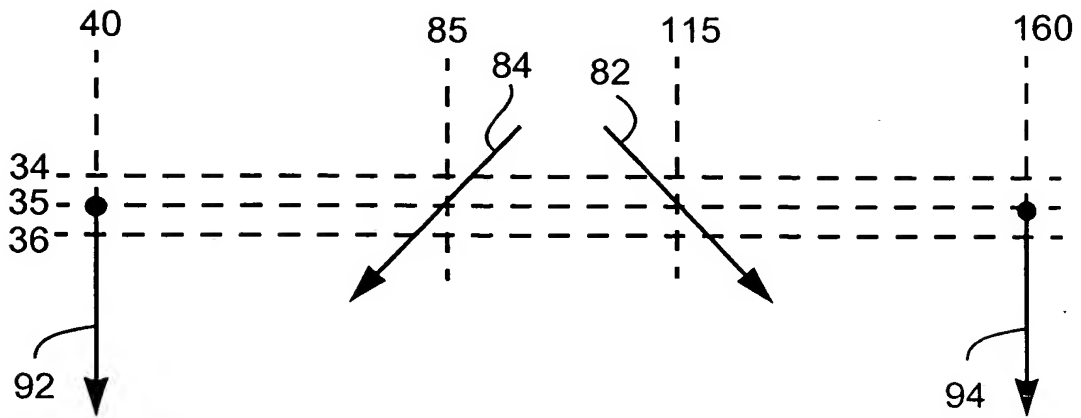
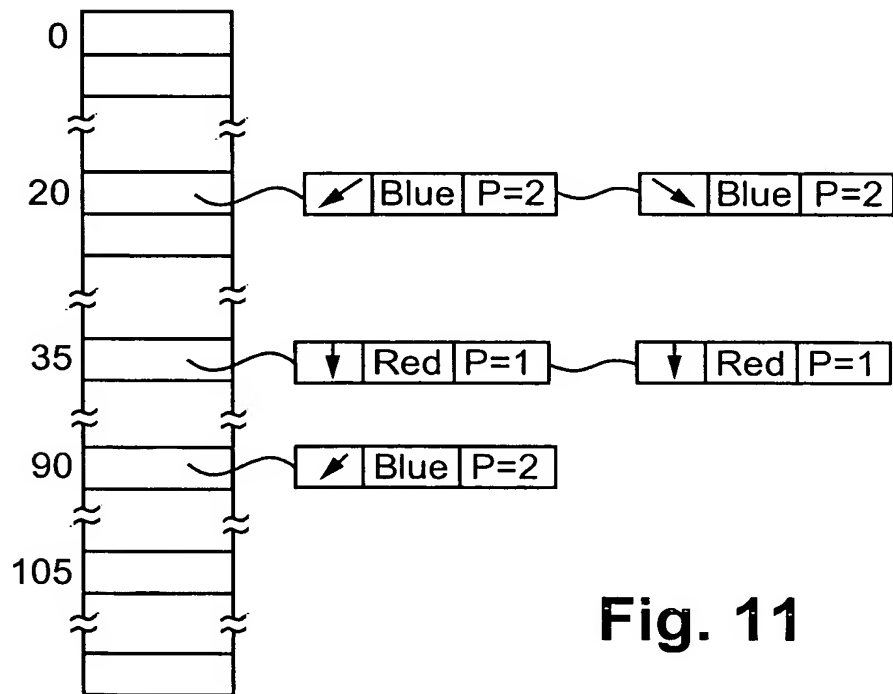
Fig. 8A

Edge 84	Edge 92
X=10	X=40
NY = 70	NY = 70
DX = -1	DX = 0
DDX = 0	DDX = 0
P = 1	P = 0
u = (-1)	u = (+1)
Addr = Irrelevant in this example	Addr = Irrelevant in this example

Fig. 8B



**Fig. 9A****Fig. 9B**

**Fig. 10****Fig. 11**

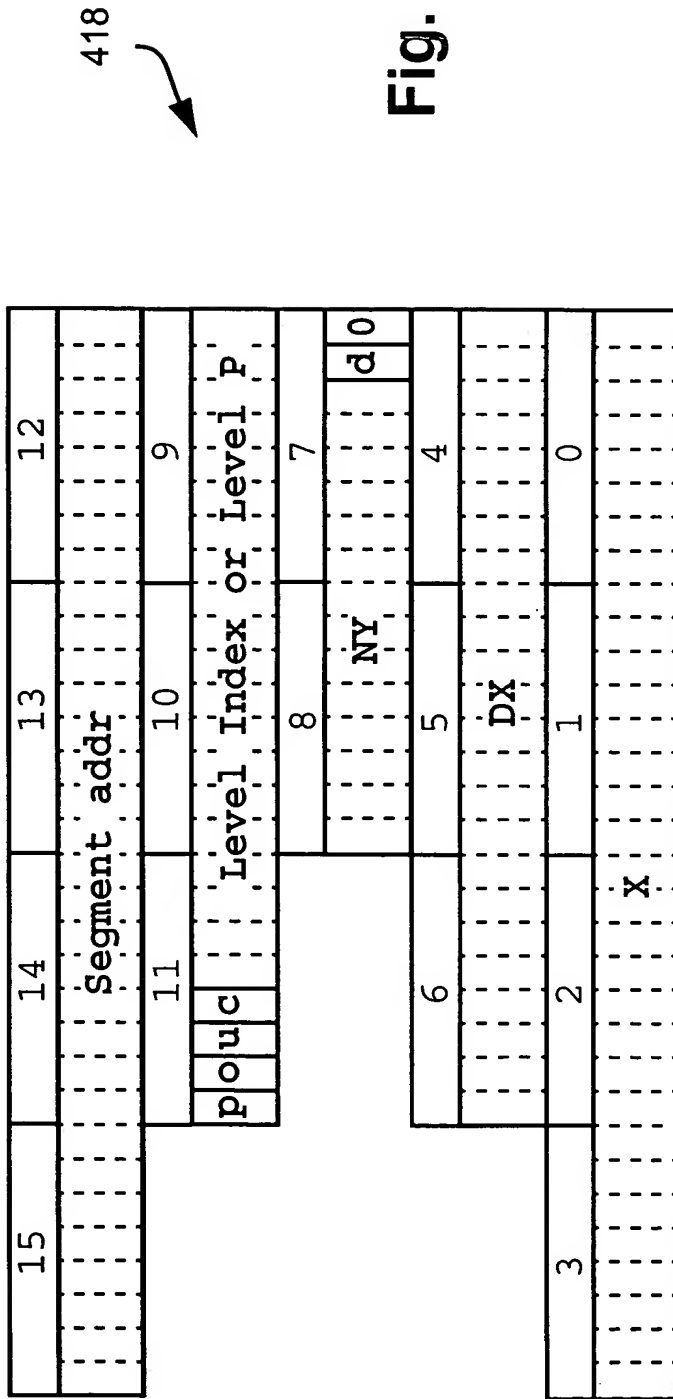


Fig. 12A

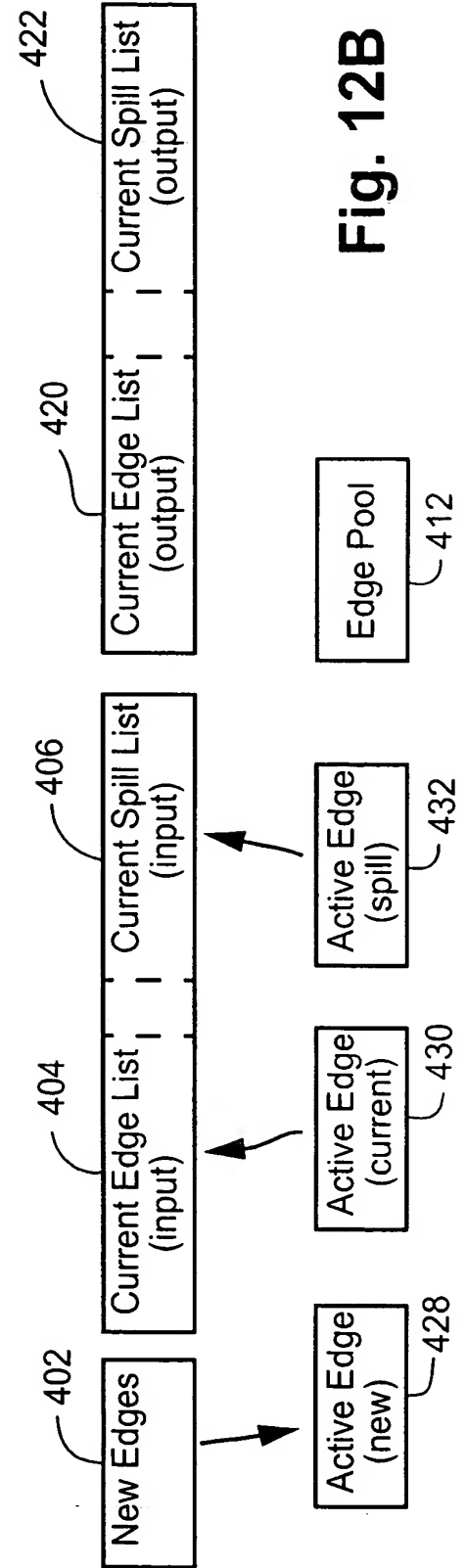


Fig. 12B

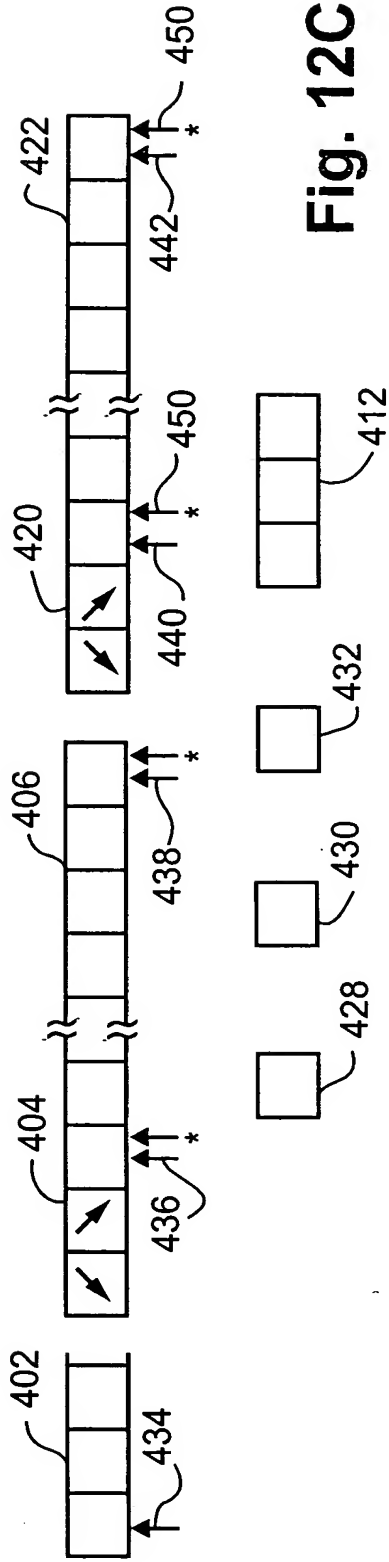


Fig. 12C

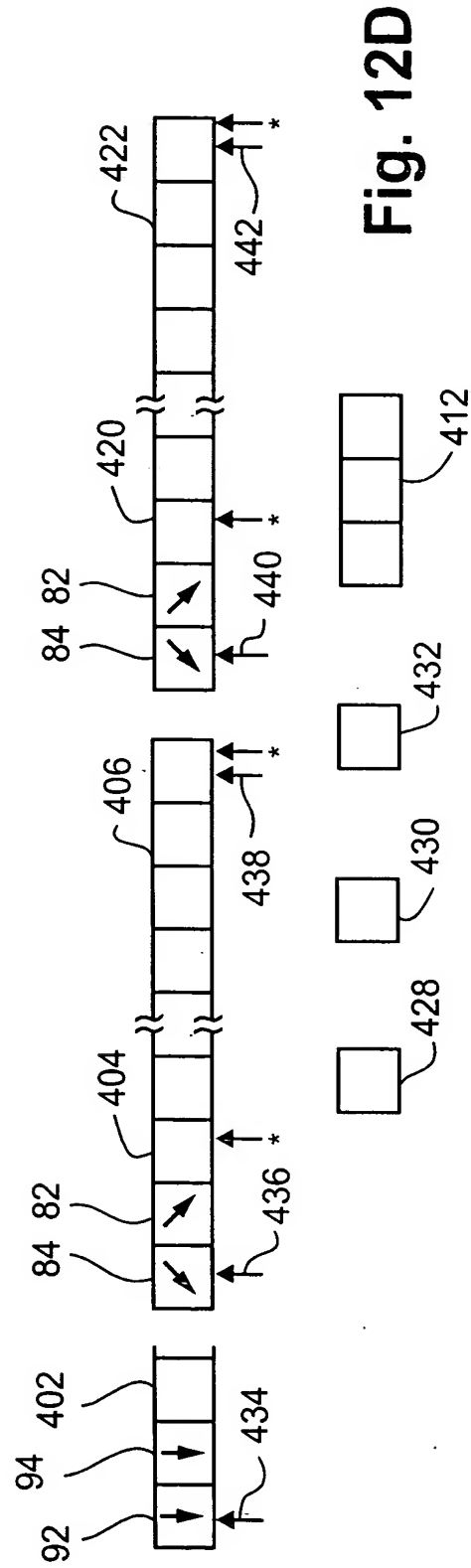
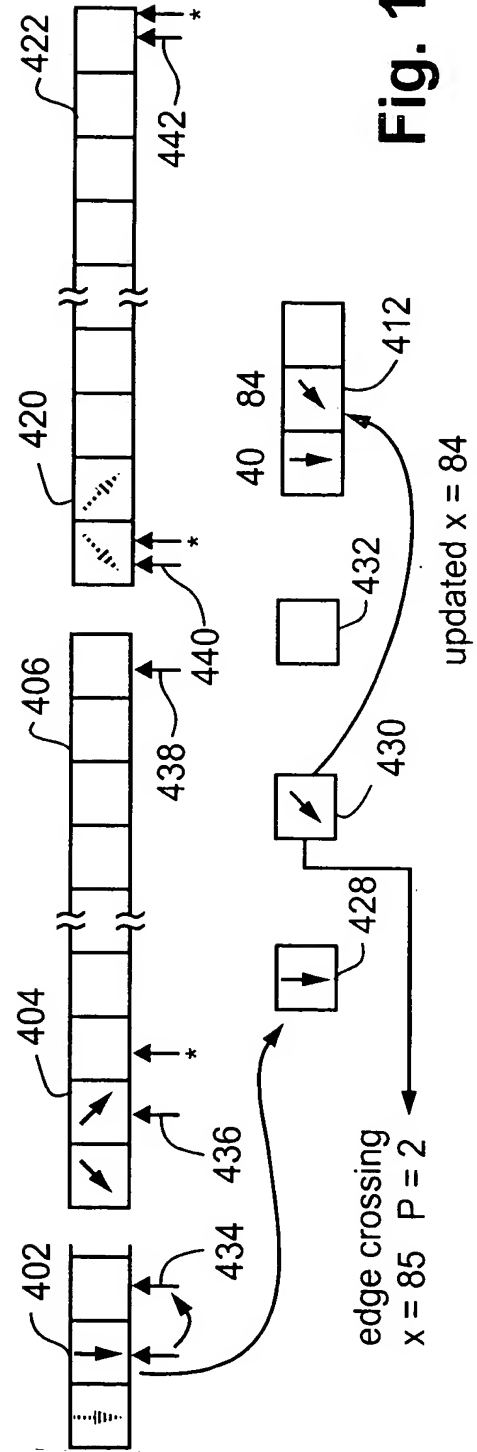
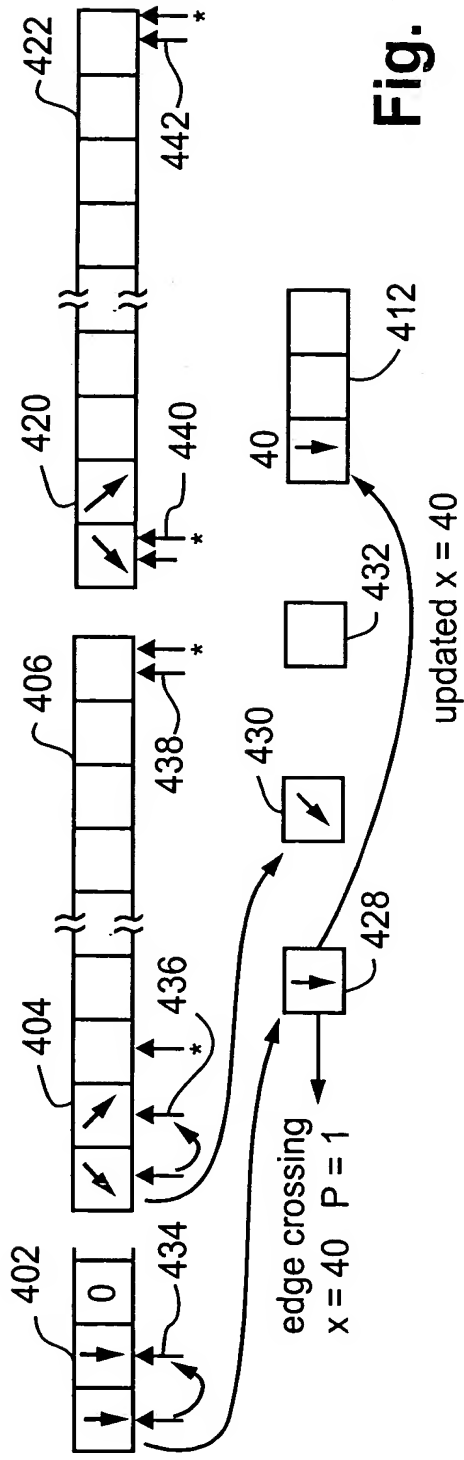
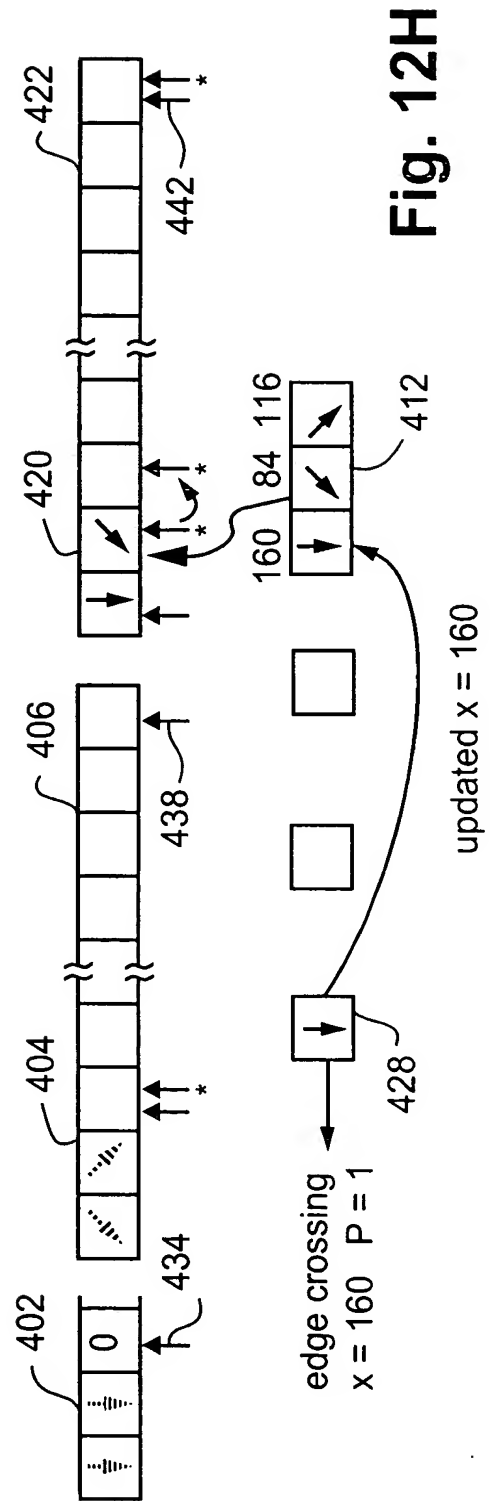
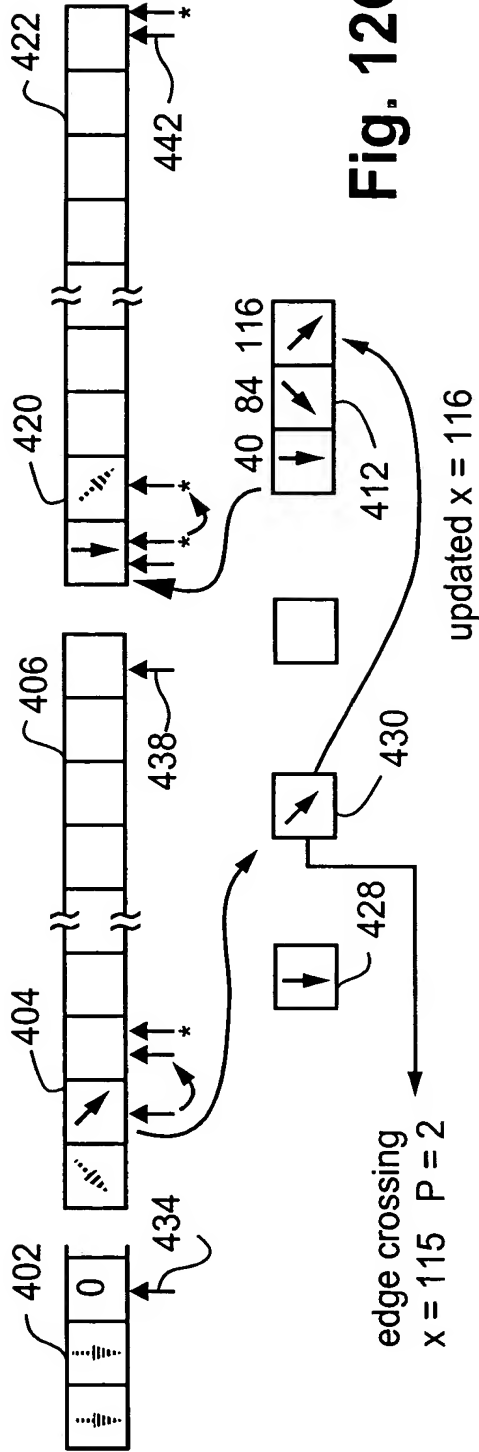


Fig. 12D





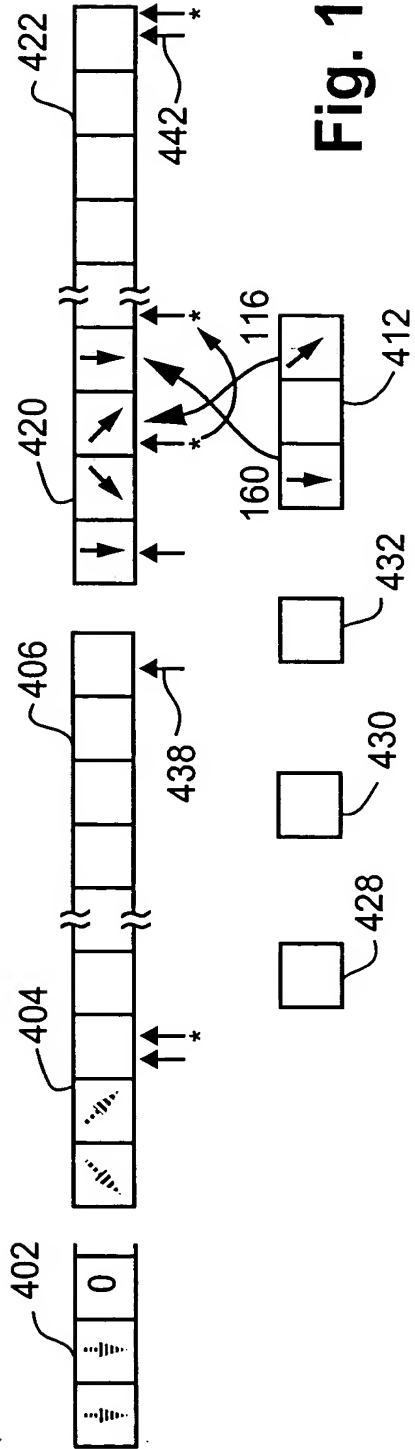


Fig. 12I

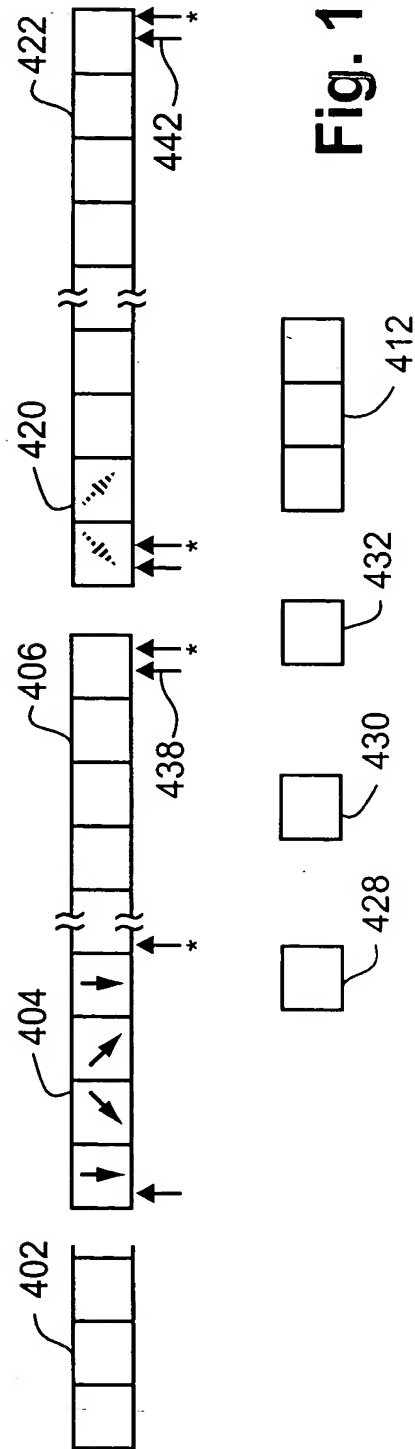
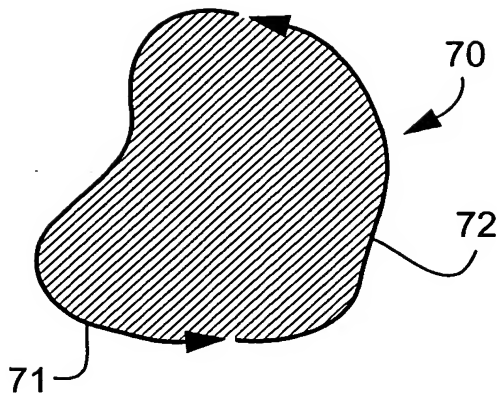
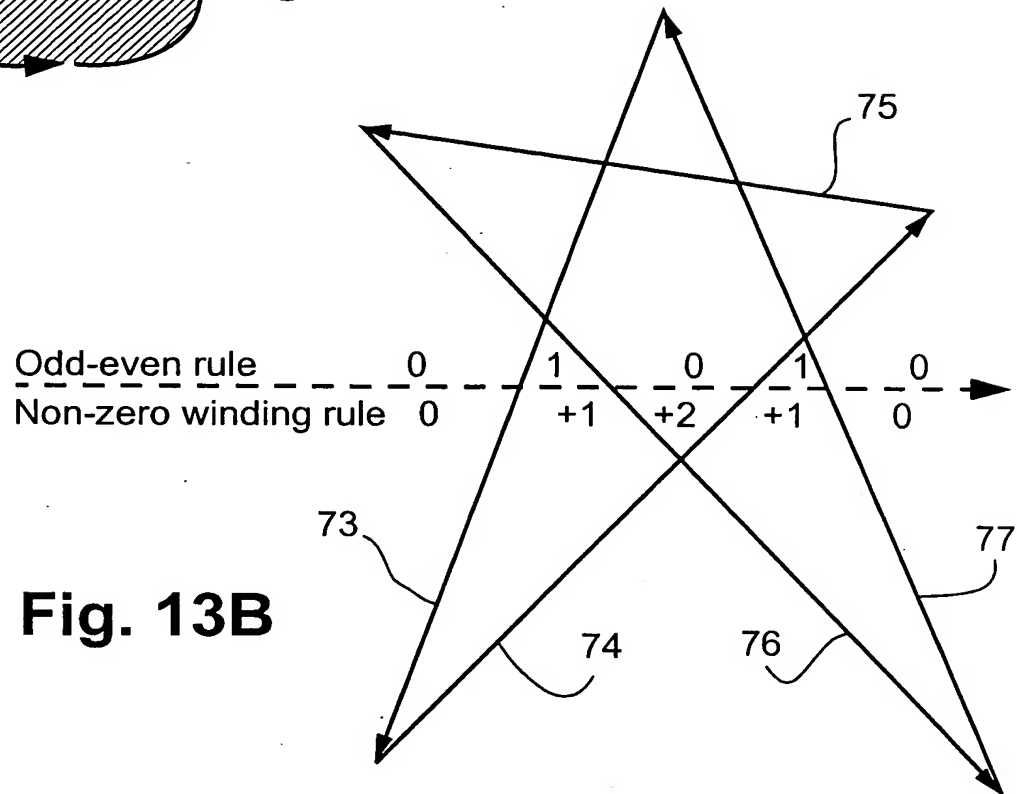
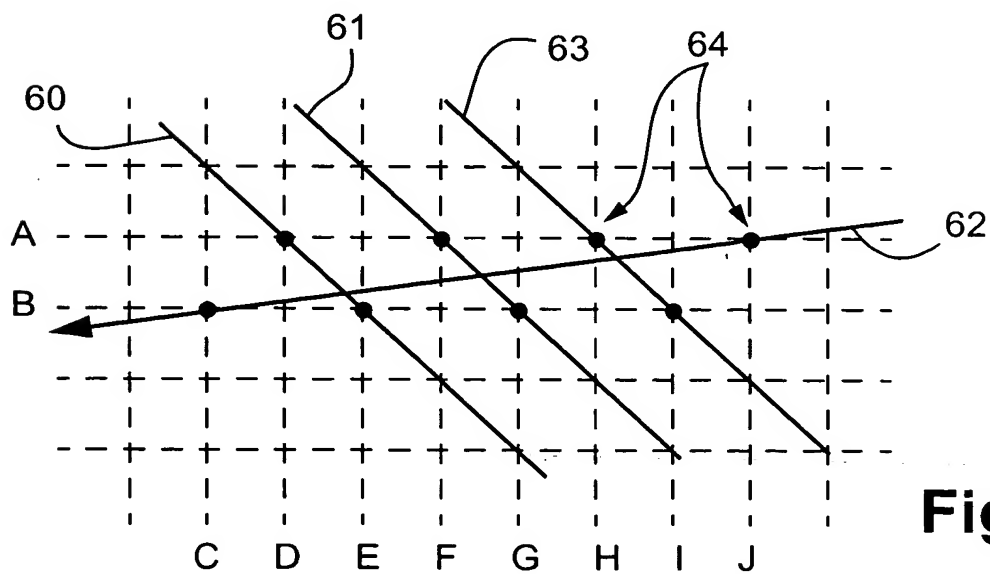


Fig. 12J

**Fig. 13A****Fig. 13B****Fig. 14A**



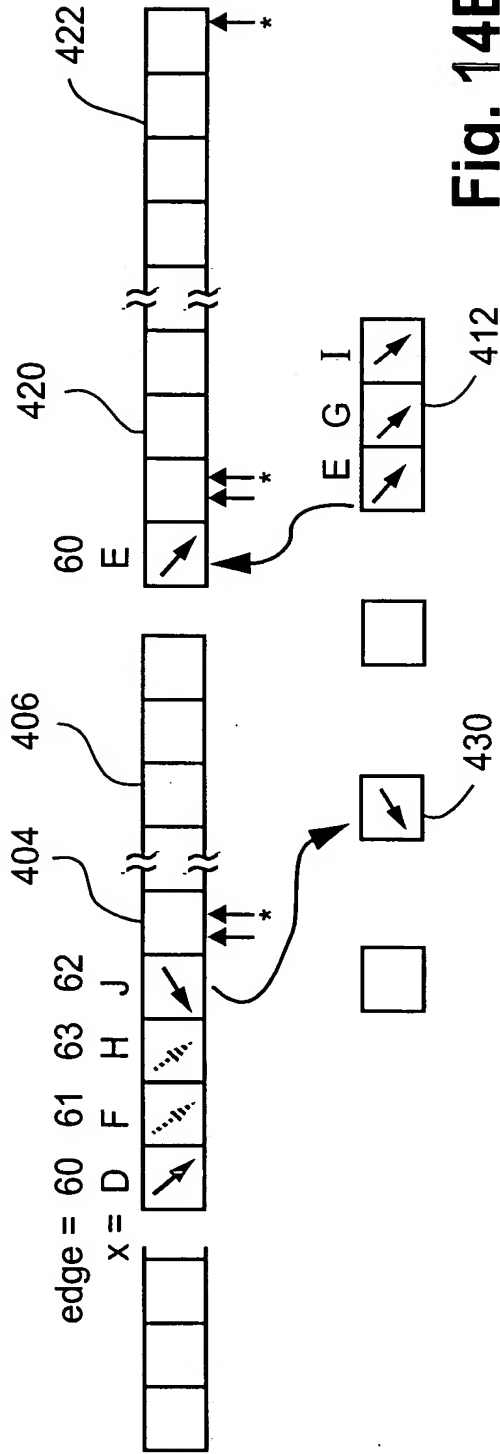


Fig. 14B

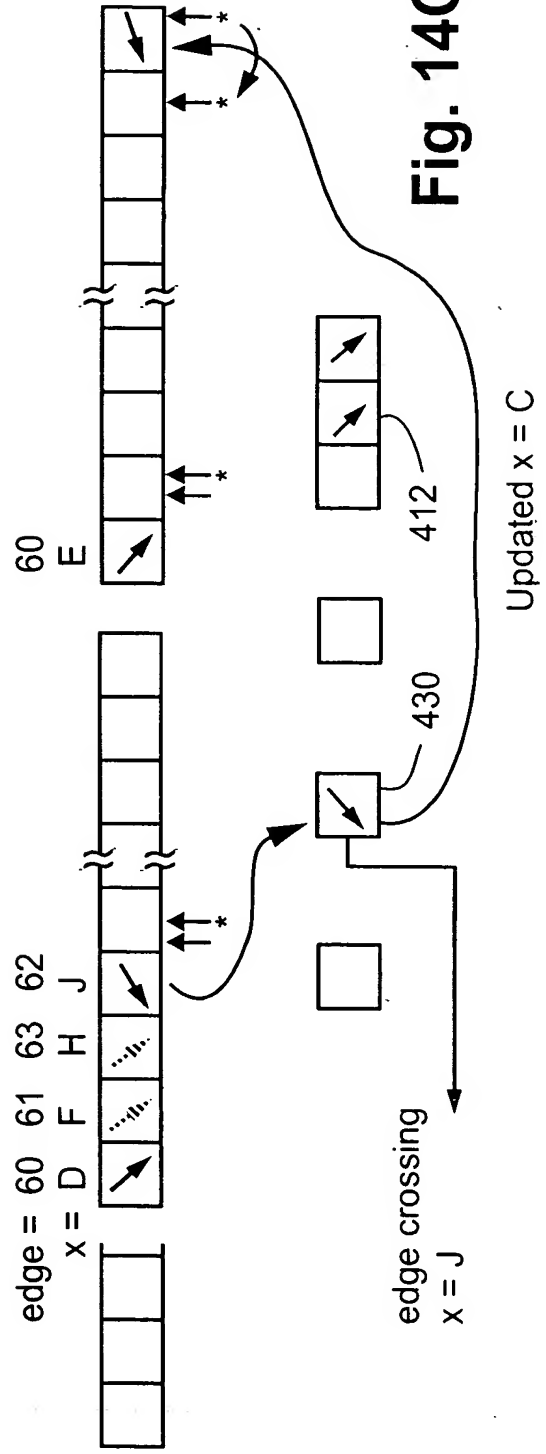


Fig. 14C

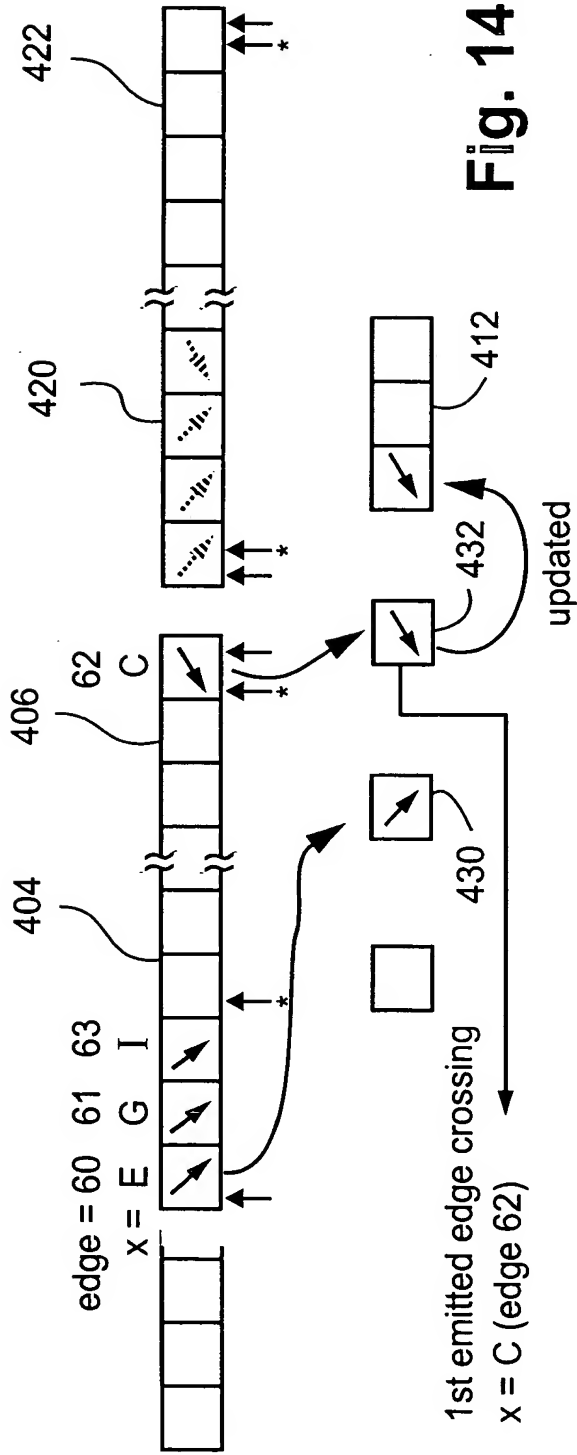


Fig. 14D

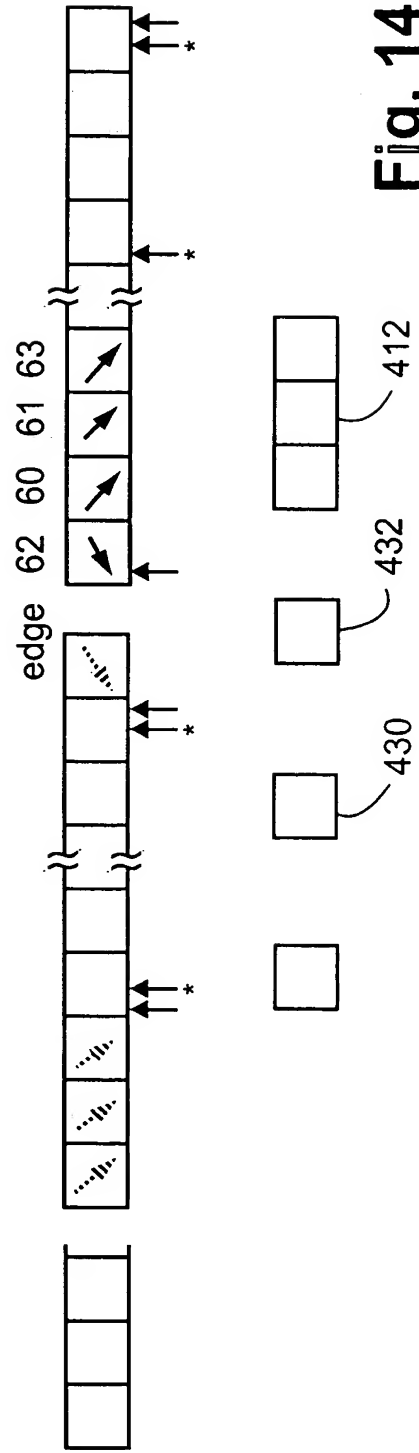
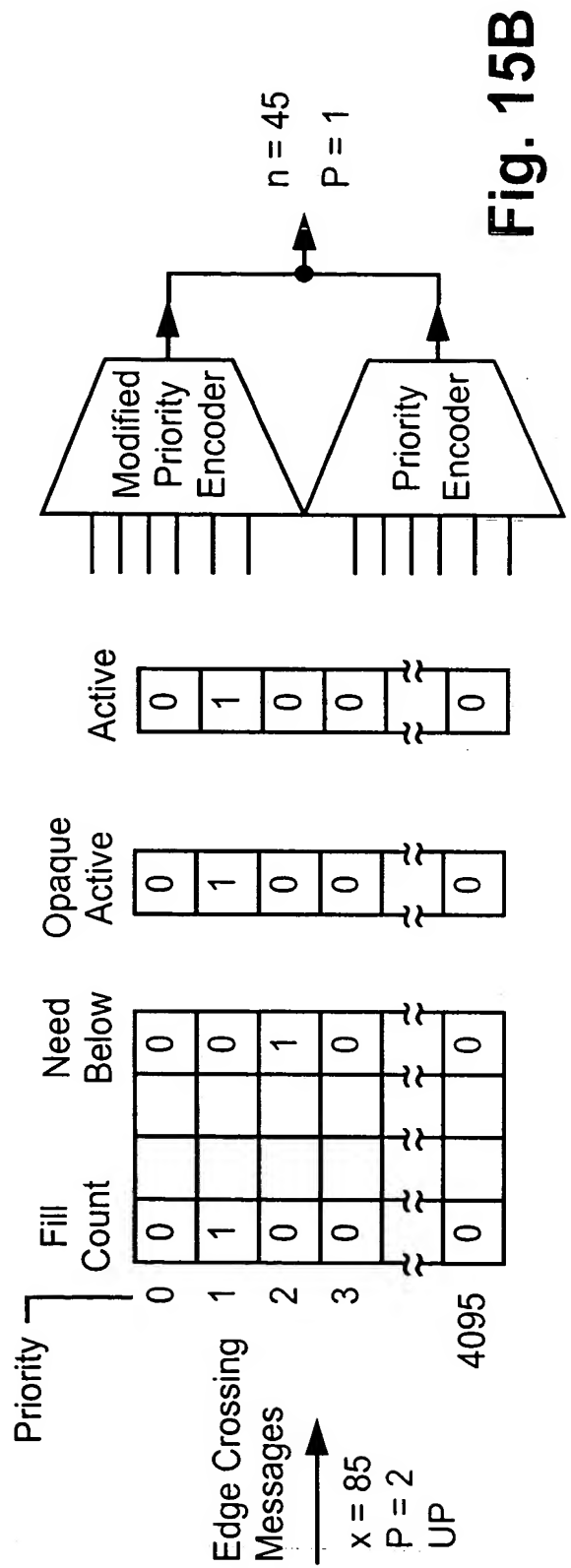
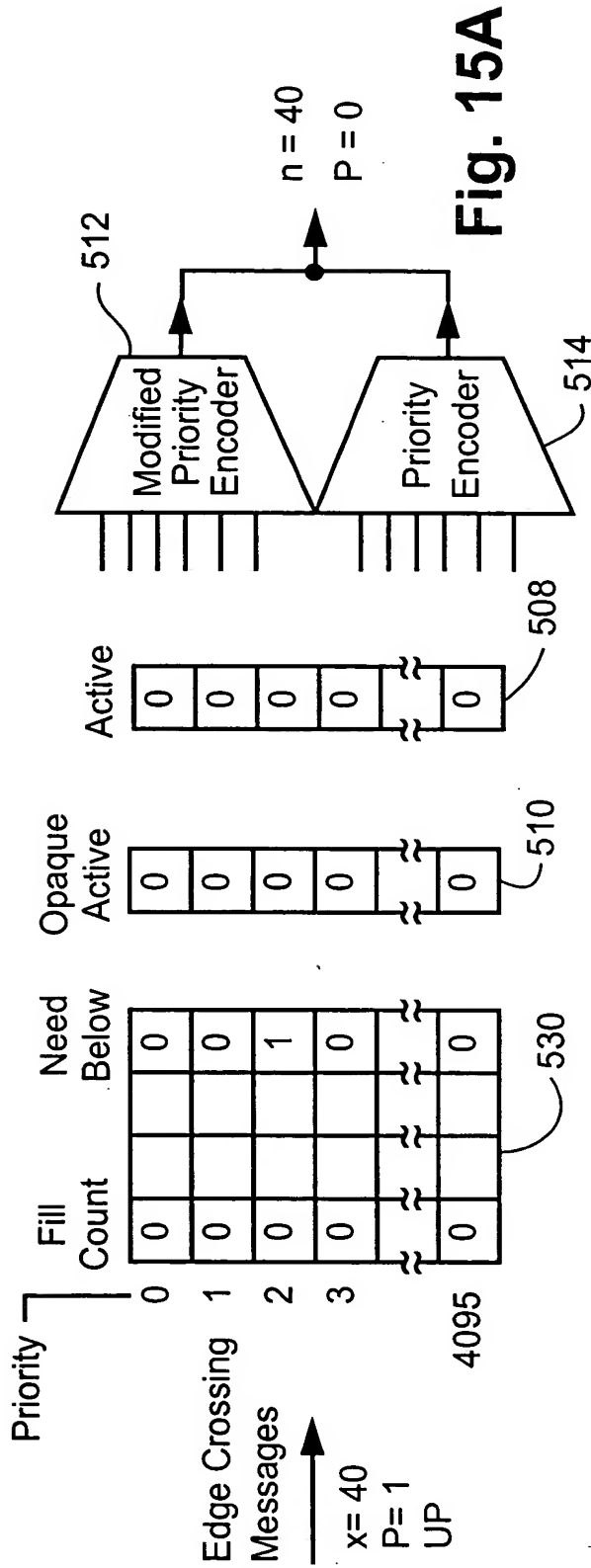
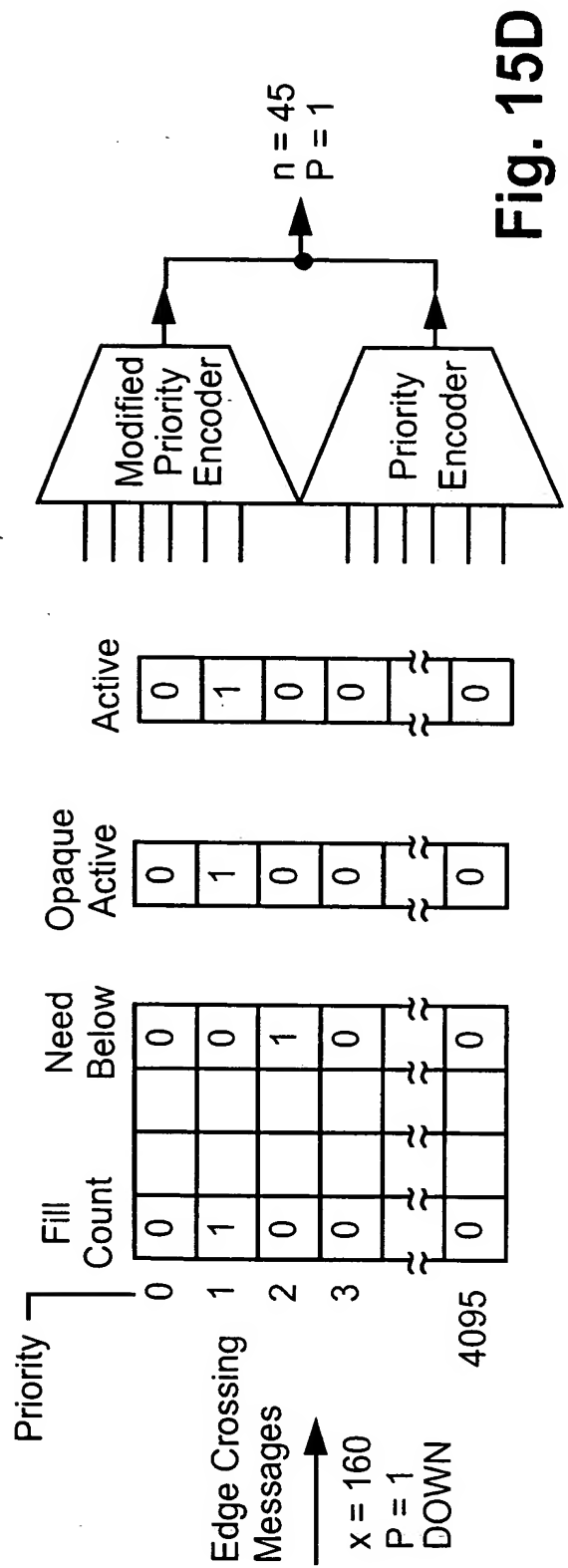
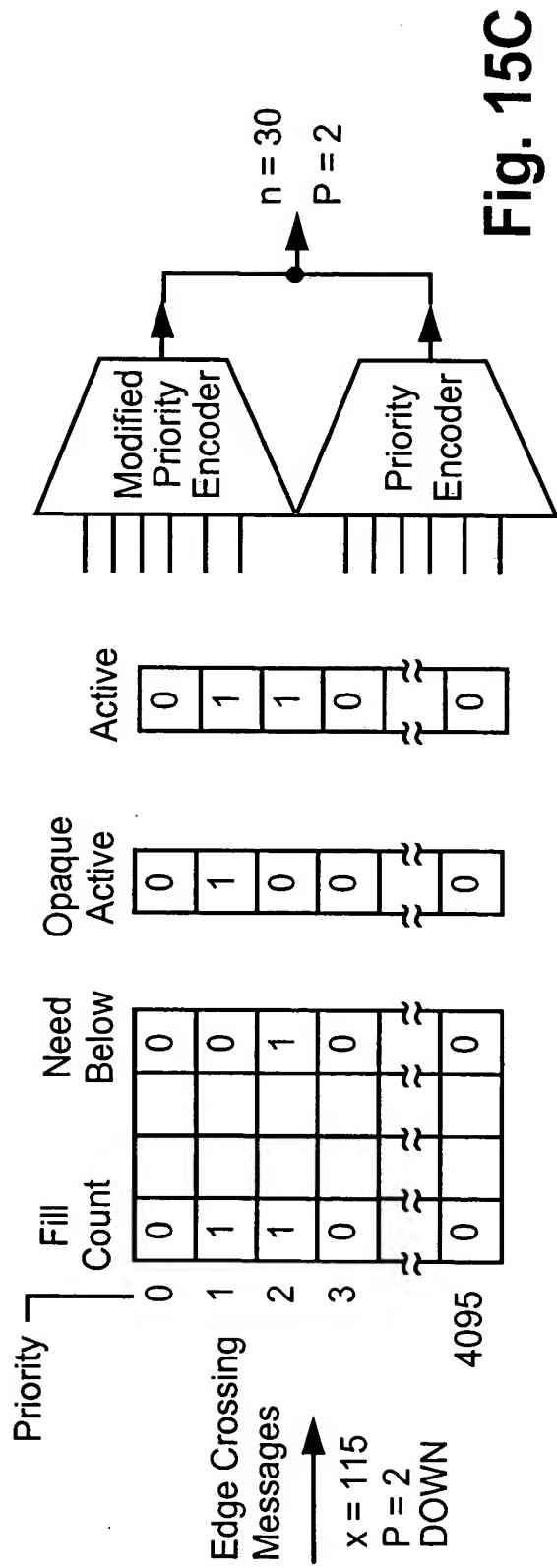


Fig. 14E





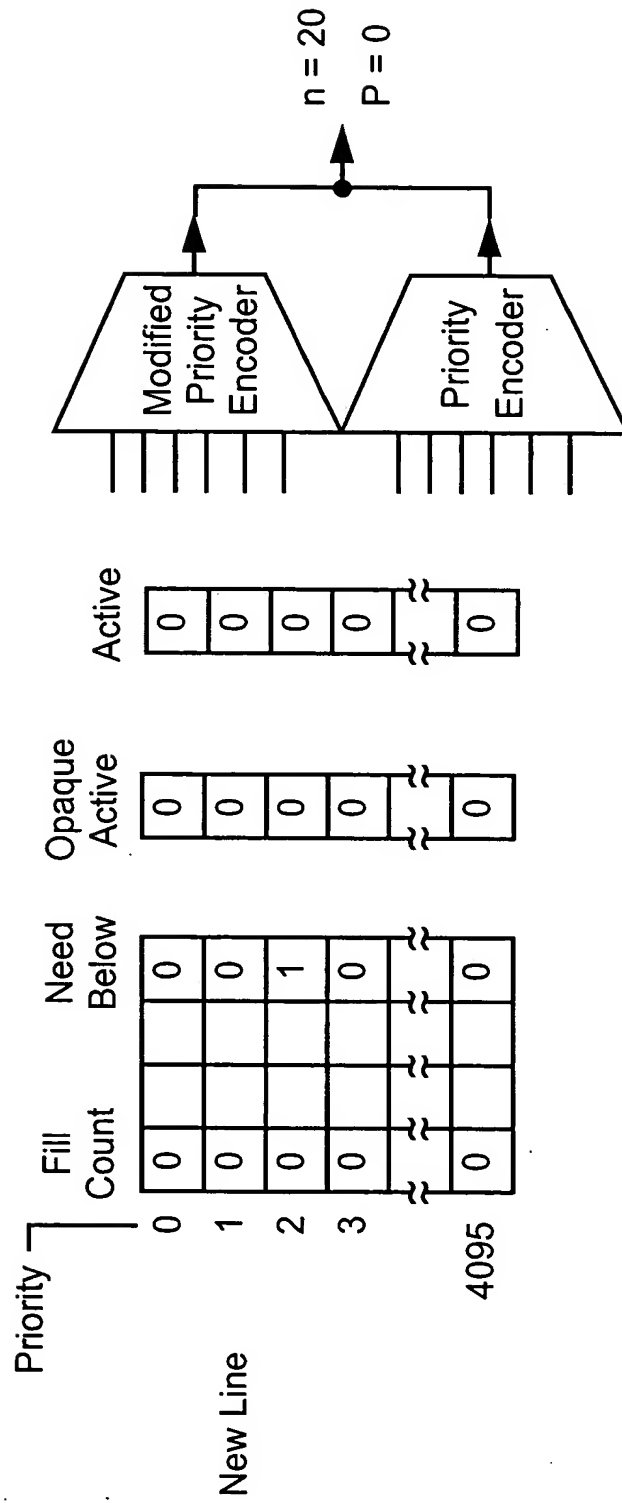
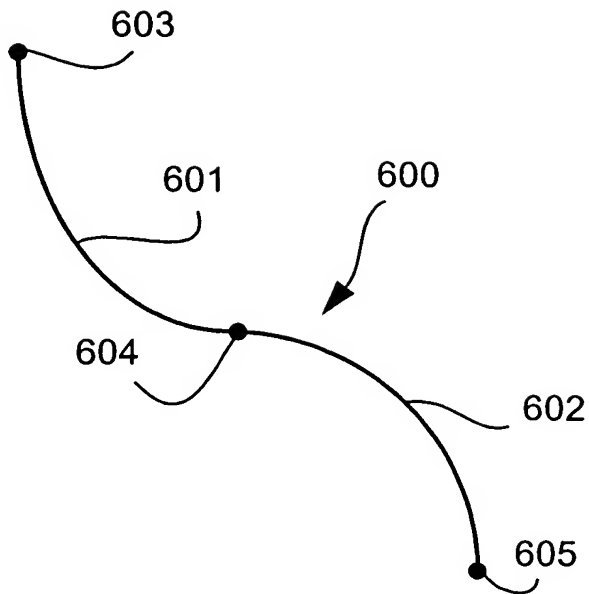
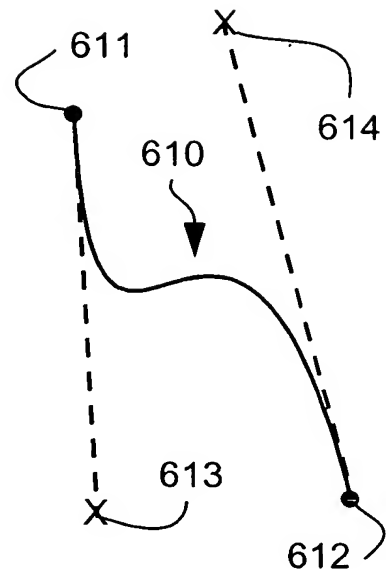


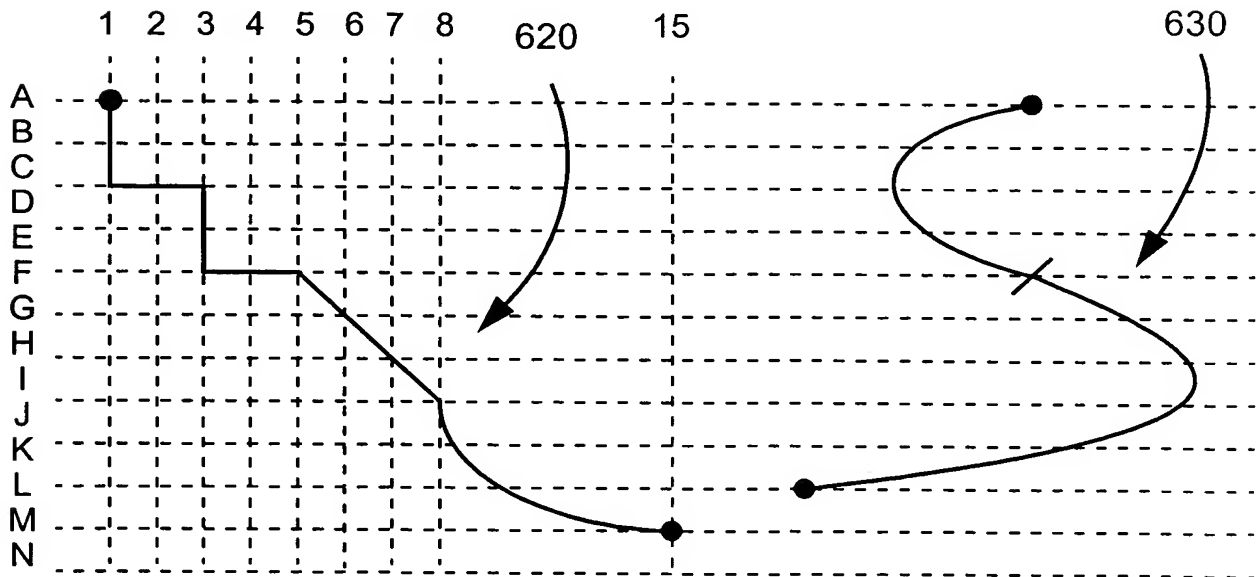
Fig. 15E



**Fig. 16A**  
(Prior Art)

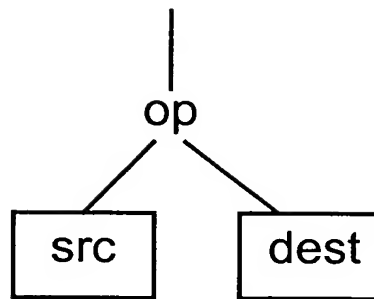
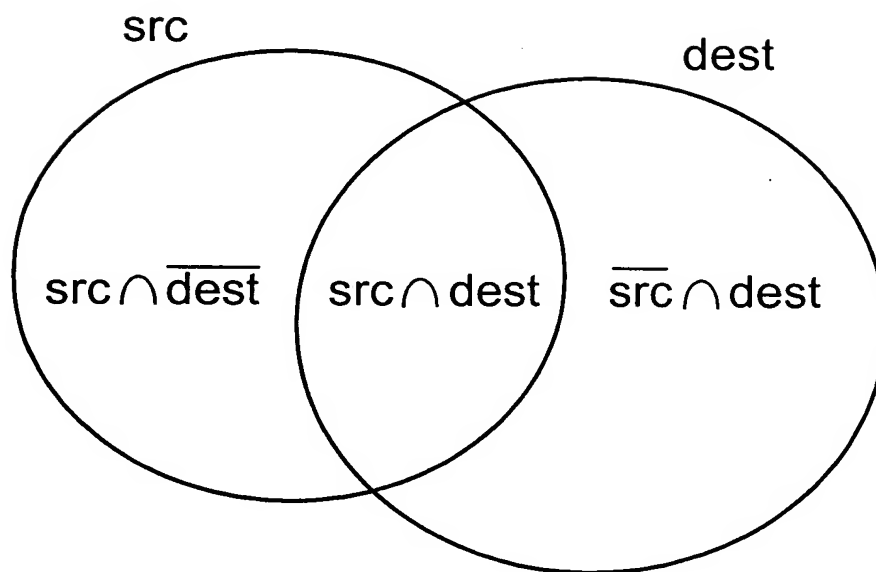


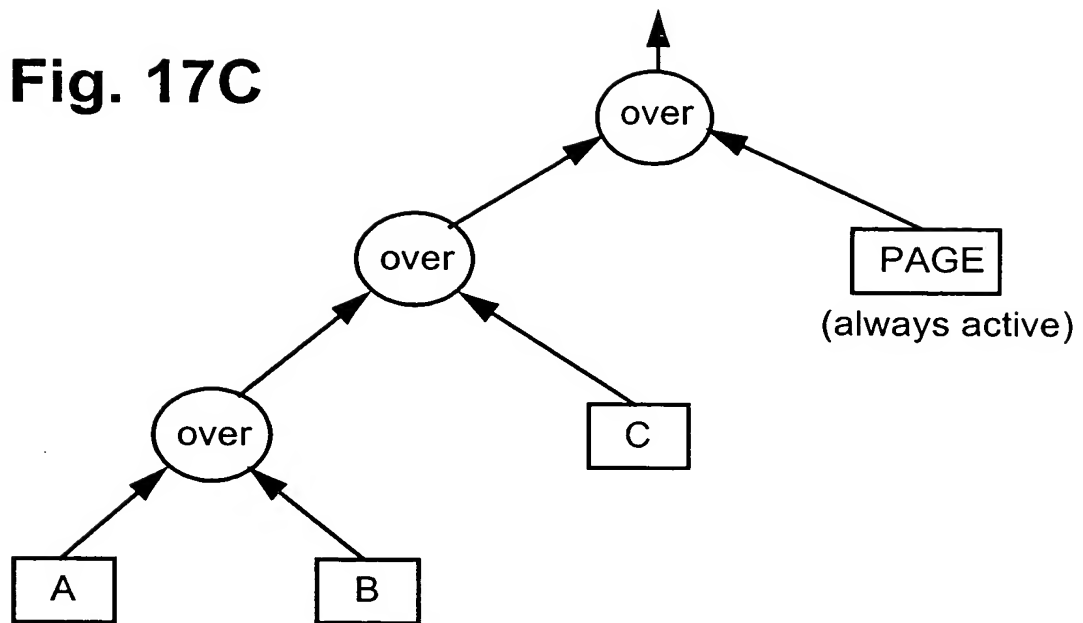
**Fig. 16B**  
(Prior Art)



**Fig. 16C**

**Fig. 16D**

**Fig. 17A****Fig. 17B**

**Fig. 17C**



[illegible]

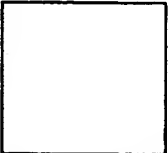
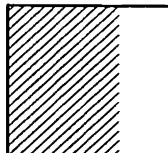
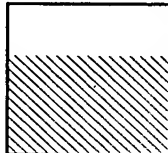
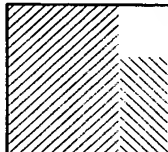
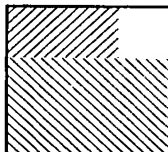
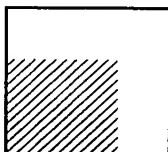


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**Fig. 18**


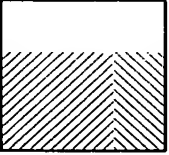
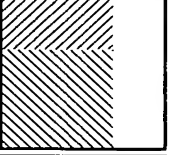

**Fig. 19**

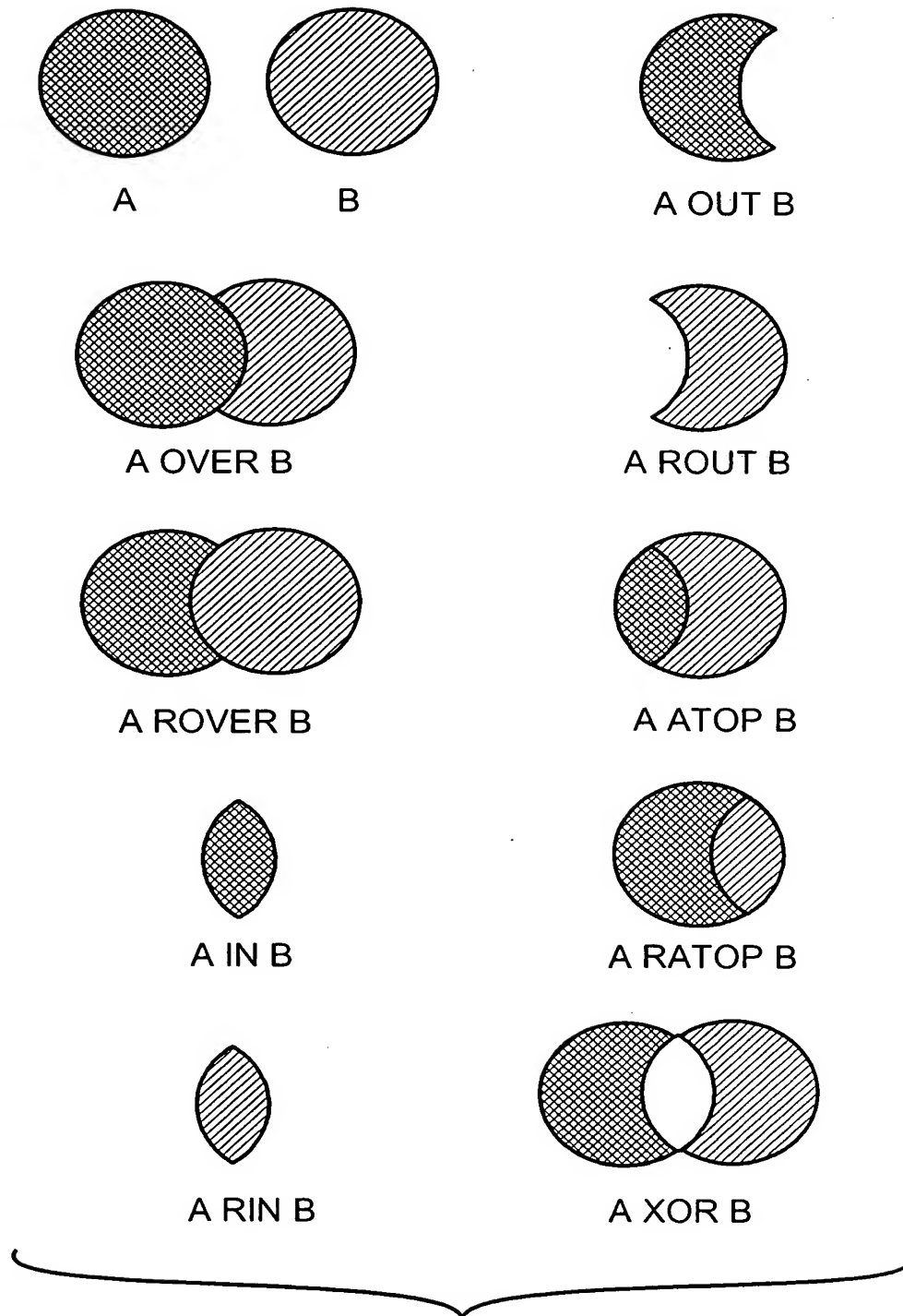
<b>Raster operation code</b>	<b>Operation</b>	<b>Operation Name</b>
0x00	$r = 0$	LCO_BLACK
0x01	$r = \text{src} \& \text{dest}$	LCO_MASKPEN
0x02	$r = \text{src} \& \sim \text{dest}$	LCO_MASKPENNOT
0x03	$r = \text{src}$	LCO_COPYPEN
0x04	$r = \sim \text{src} \& \text{dest}$	LCO_MASKNOTPEN
0x05	$r = \text{dest}$	LCO_NOP
0x06	$r = \text{src} \wedge \text{dest}$	LCO_XORPEN
0x07	$r = \text{src}   \text{dest}$	LCO_MERGE PEN
0x08	$r = \sim(\text{src}   \text{dest})$	LCO_NOTMERGEPEN
0x09	$r = \sim(\text{src} \wedge \text{dest})$	LCO_NOTXORPEN
0x0a	$r = \sim \text{dest}$	LCO_NOT
0x0b	$r = \text{src}   \sim \text{dest}$	LCO_MERGE PENNOT
0x0c	$r = \sim \text{src}$	LCO_NOTCOPYPEN
0x0d	$r = \sim \text{src}   \text{dest}$	LCO_MERGE NOTPEN
0x0e	$r = \sim(\text{src} \& \text{dest})$	LCO_NOTMASKPEN
0x0f	$r = 0\text{xff}$	LCO_WHITE
0x10	$r = \min(\text{src}, \text{dest})$	LCO_MIN
0x11	$r = \max(\text{src}, \text{dest})$	LCO_MAX
0x12	$r = \text{clamp}(\text{src} + \text{dest})$	LCO_PLUS
0x13	$r = \text{src}$	LCO_COPYPEN_PREMULTIPLIED
0x14	$r = \text{clamp}(\text{src} - \text{dest})$	LCO_SRC_MINUS_DEST
0x15	$r = \text{dest}$	LCO_NOP_PREMULTIPLIED
0x16	$r = \text{clamp}(\text{dest} - \text{src})$	LCO_DEST_MINUS_SRC
0x17	$r = \text{clamp}(\text{src} + \text{dest})$ where dest is signed	LCO_PLUS_SIGNED_DEST
0x18	$r = \text{threshold}(\text{dest}, \text{src})$	LCO_THRESH_DEST_SRC
0x19	$r = \text{threshold}(\text{src}, \text{dest})$	LCO_THRESH_SRC_DEST
0x1a	$r = \sim \text{dest}$	LCO_NOT_DATTR
0x1b	$o = \text{luminance}(\text{dest}; \text{src})$	LCO_LUMINANCE
0x1c	$r = \sim \text{src}$	LCO_NOTCOPYPEN_SATTR
0x1d	$o = \text{ckey}(\text{dest}; \text{src} +/- o)$	LCO_CKEY

**Fig. 20A**

Operator	COLOR_OP	ALPHA_OP Flags Set	Diagram
clear	not used	none	
src	LCO_COPYPEN	LAO_USE_S_ROP_D LAO_USE_S_OUT_D	
dest	LCO_NOP	LAO_USE_S_ROP_D LAO_USE_D_OUT_S	
src over dest	LCO_COPYPEN	LAO_USE_S_ROP_D LAO_USE_S_OUT_D LAO_USE_D_OUT_S	
src rover dest (dest over src)	LCO_NOP	LAO_USE_S_ROP_D LAO_USE_S_OUT_D LAO_USE_D_OUT_S	
src in dest	LCO_COPYPEN	LAO_USE_S_ROP_D	
src rin dest (dest in src)	LCO_NOP	LAO_USE_S_ROP_D	
src out dest	not used	LAO_USE_S_OUT_D	

**Fig. 20B**

Operator	COLOR_OP	ALPHA_OP Flags Set	Diagram
src <b>rout</b> dest (dest <b>out</b> src)	not used	LAO_USE_D_OUT_S	
src <b>atop</b> dest	LCO_COPYPEN	LAO_USE_S_ROP_D LAO_USE_D_OUT_S	
src <b>ratop</b> dest (dest <b>atop</b> src)	LCO_NOP	LAO_USE_S_ROP_D LAO_USE_S_OUT_D	
src <b>xor</b> dest	not used	LAO_USE_S_OUT_D LAO_USE_D_OUT_S	

**Fig. 21**

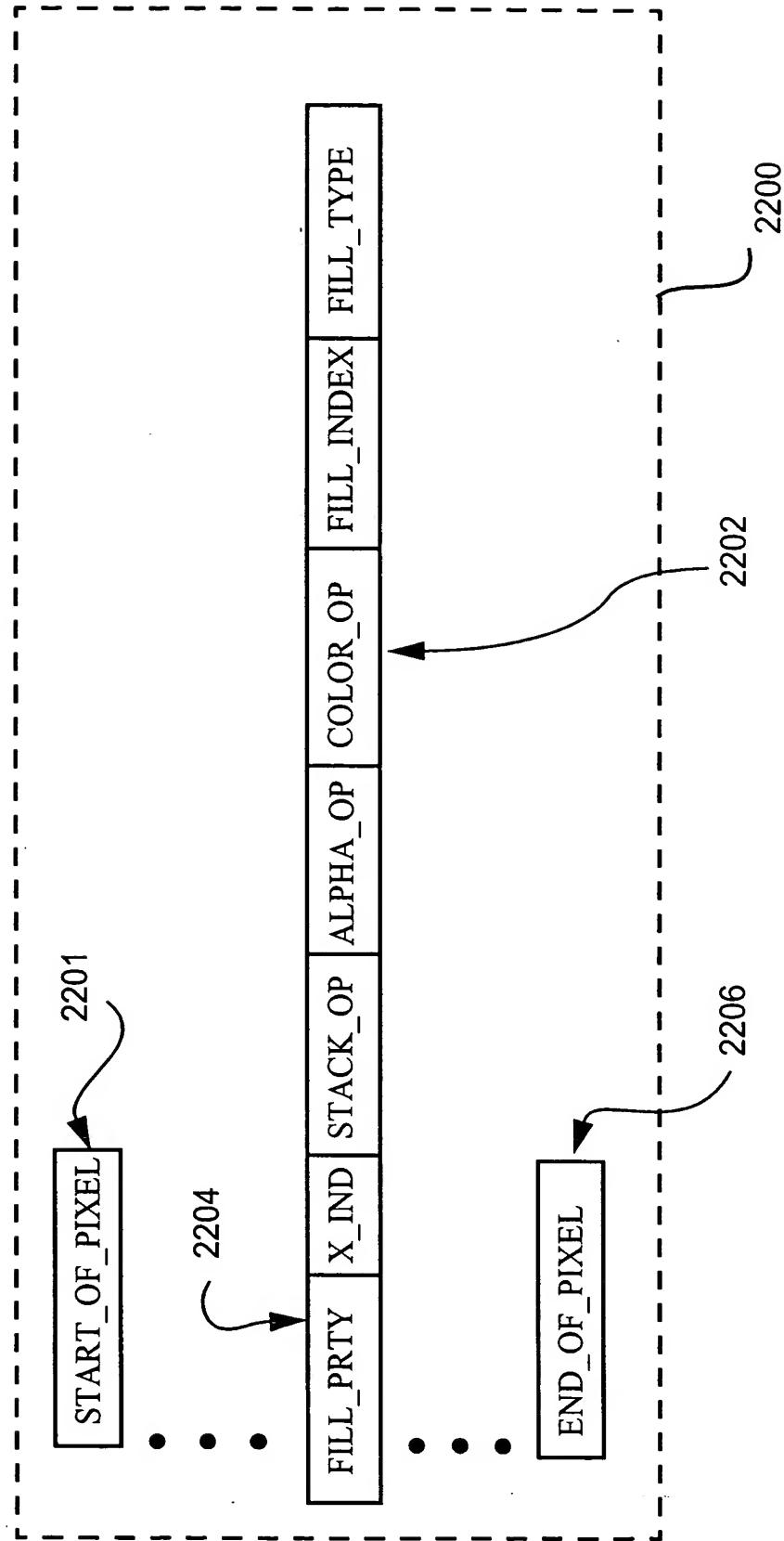


Fig. 22A

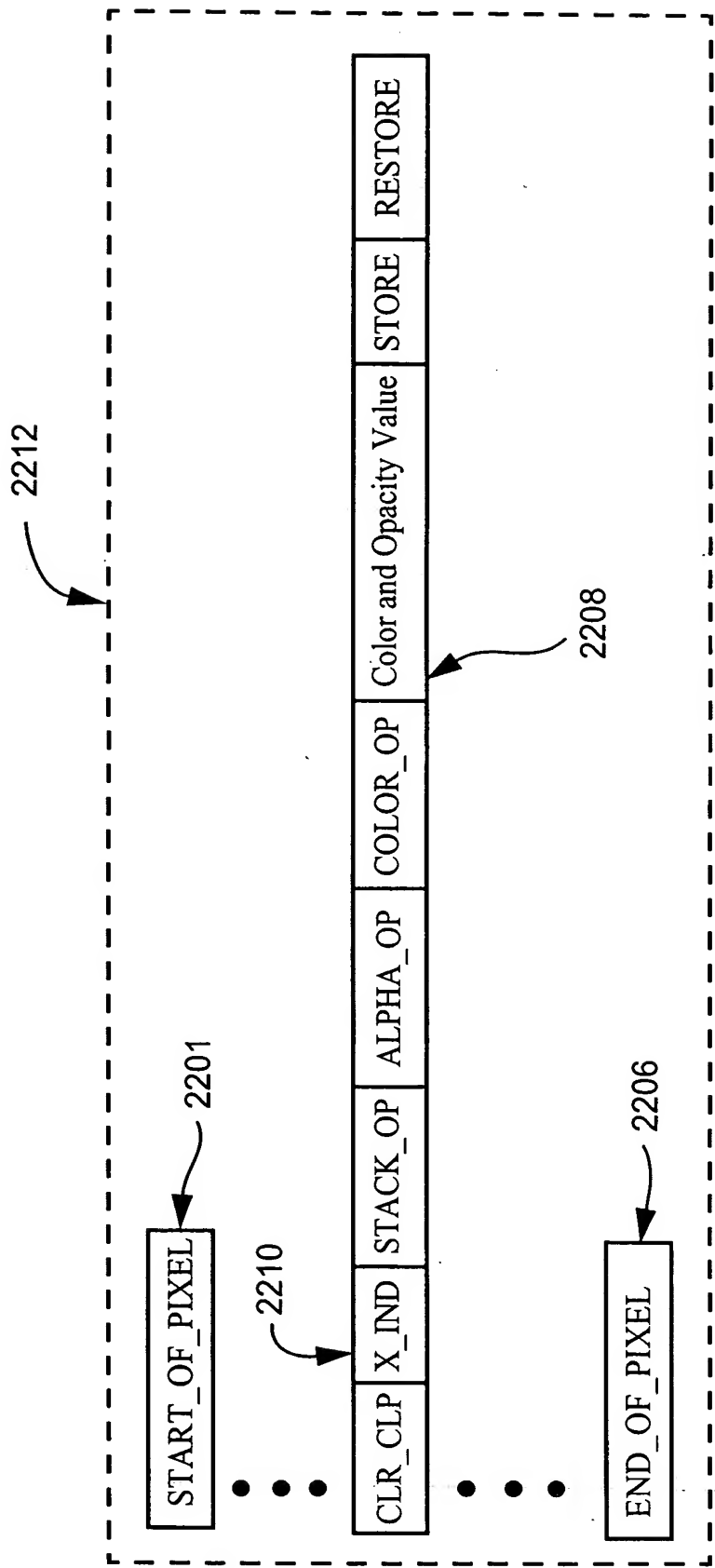
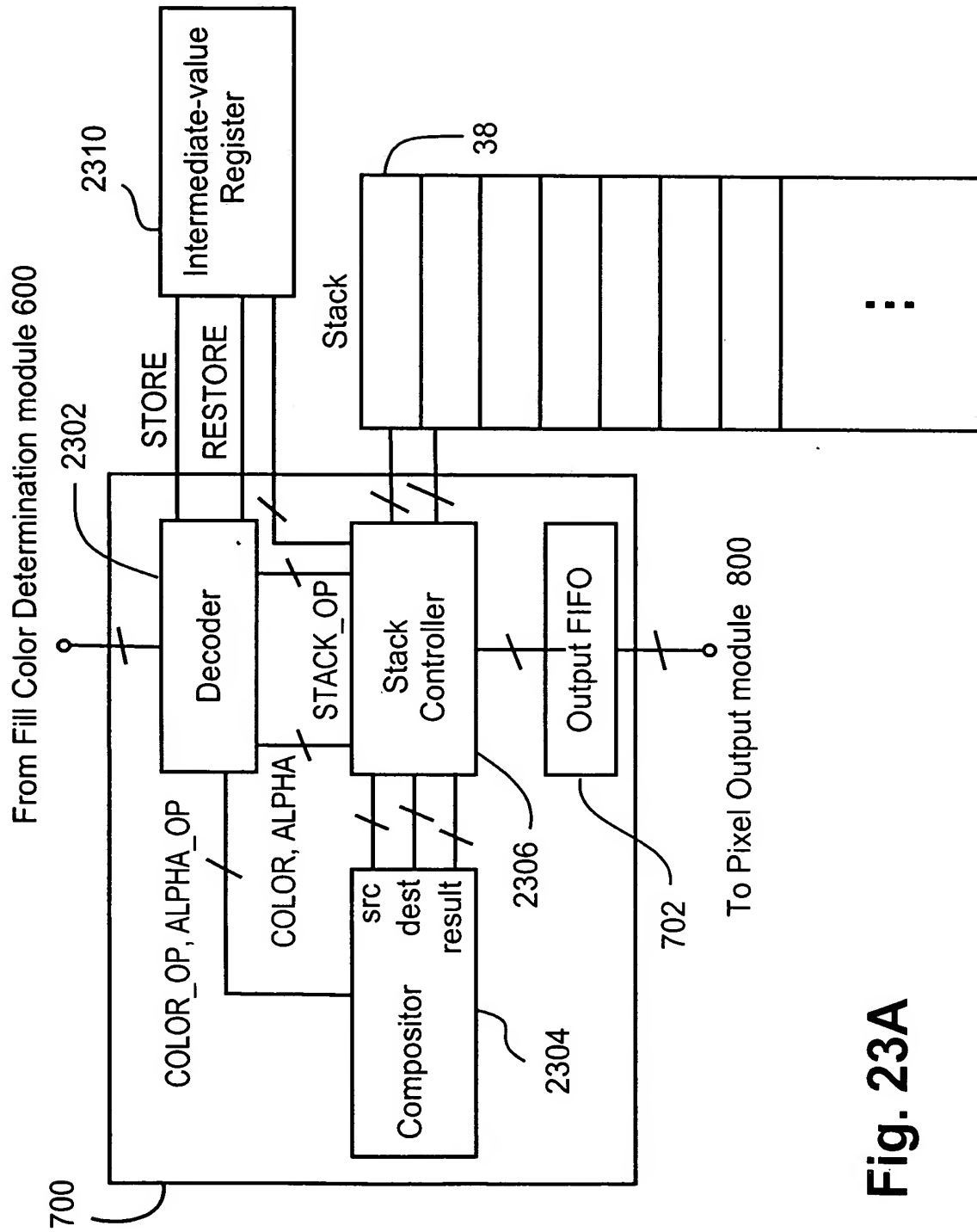


Fig. 22B



**Fig. 23A**



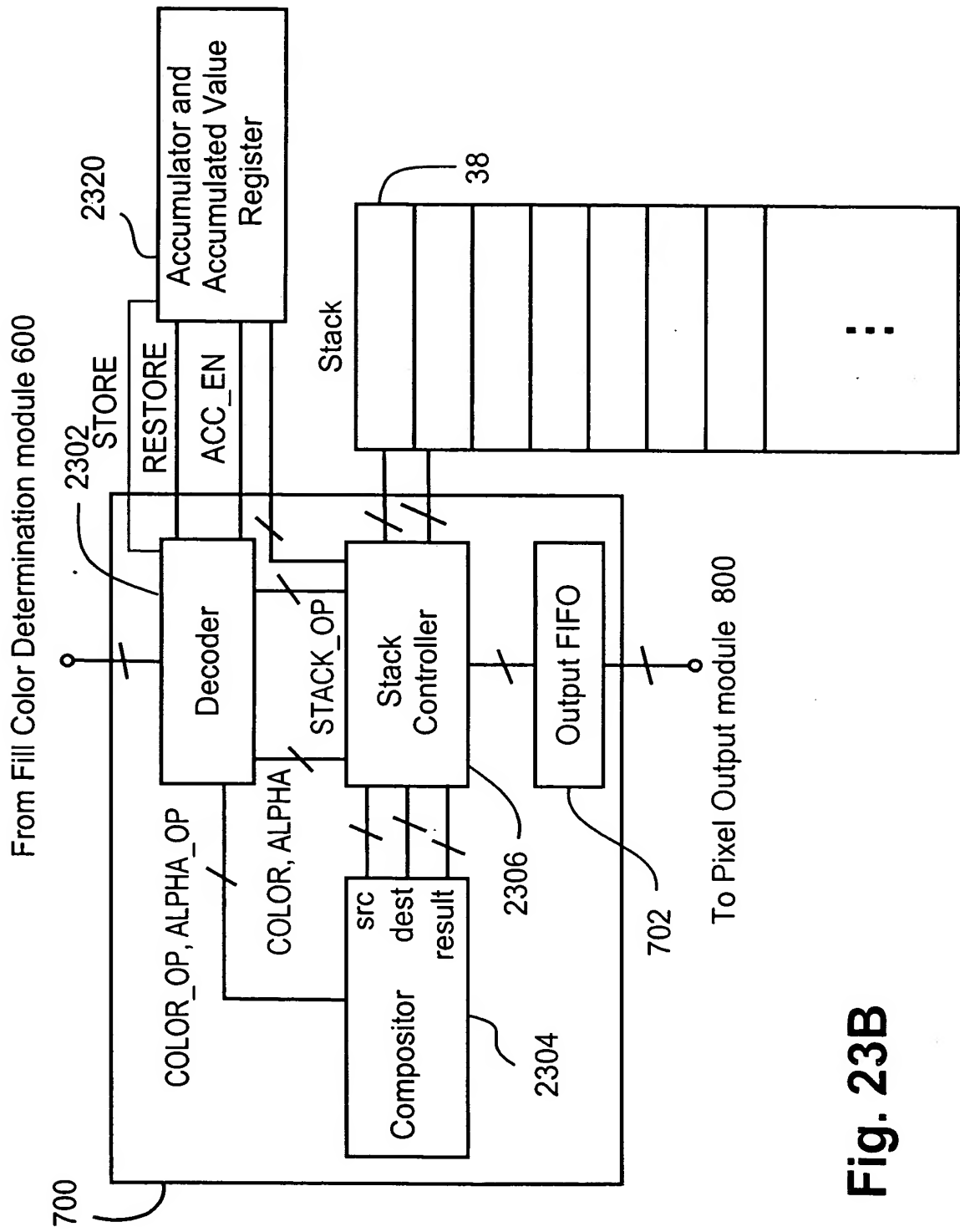
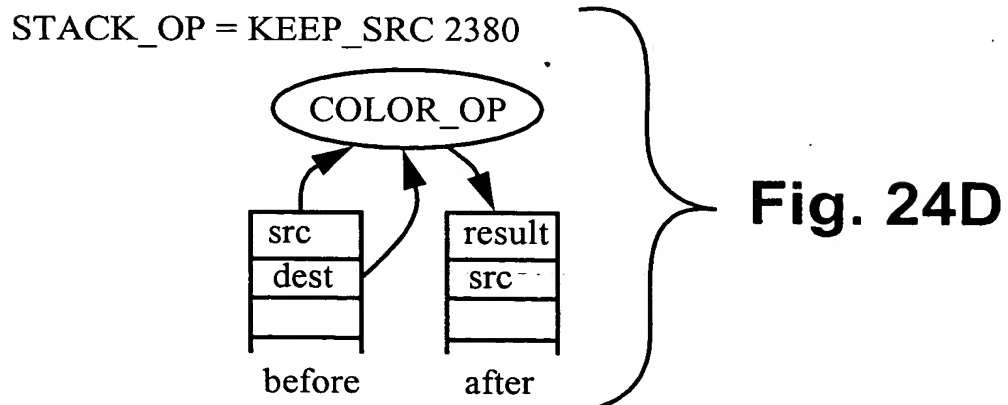
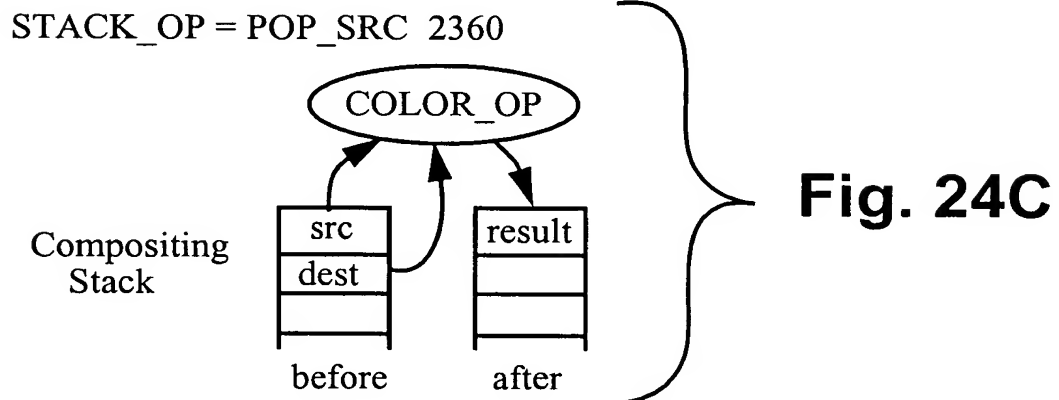
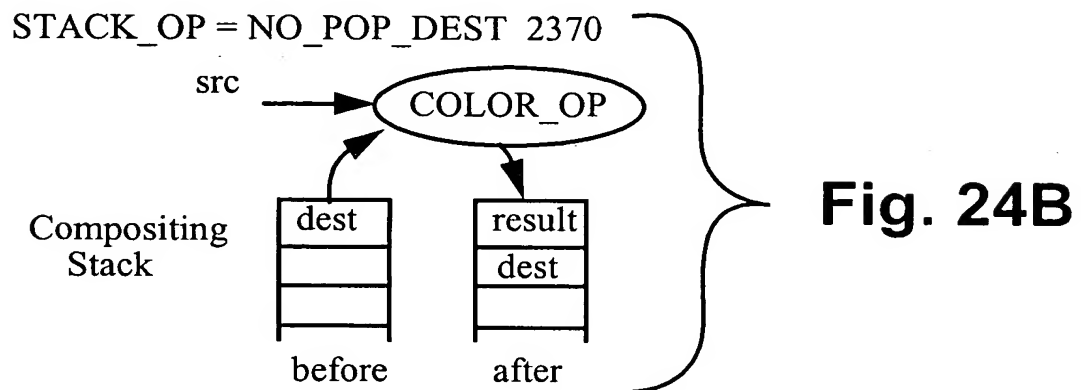
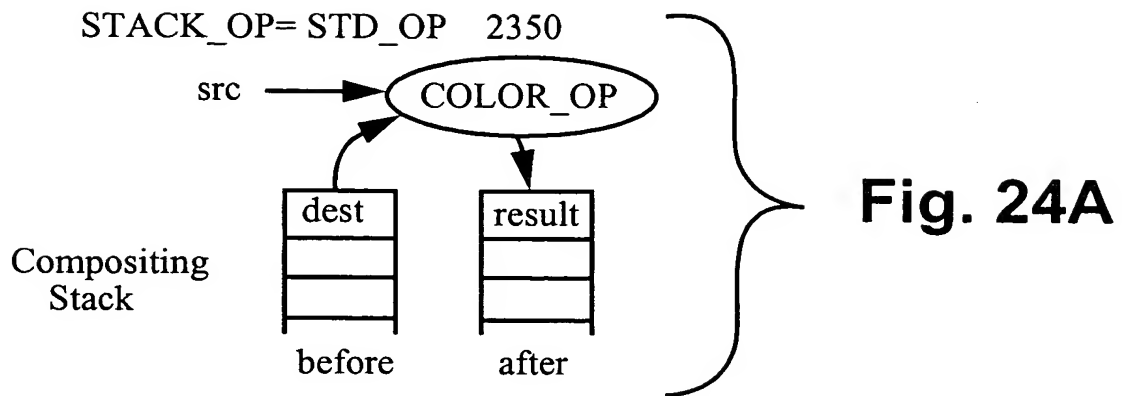
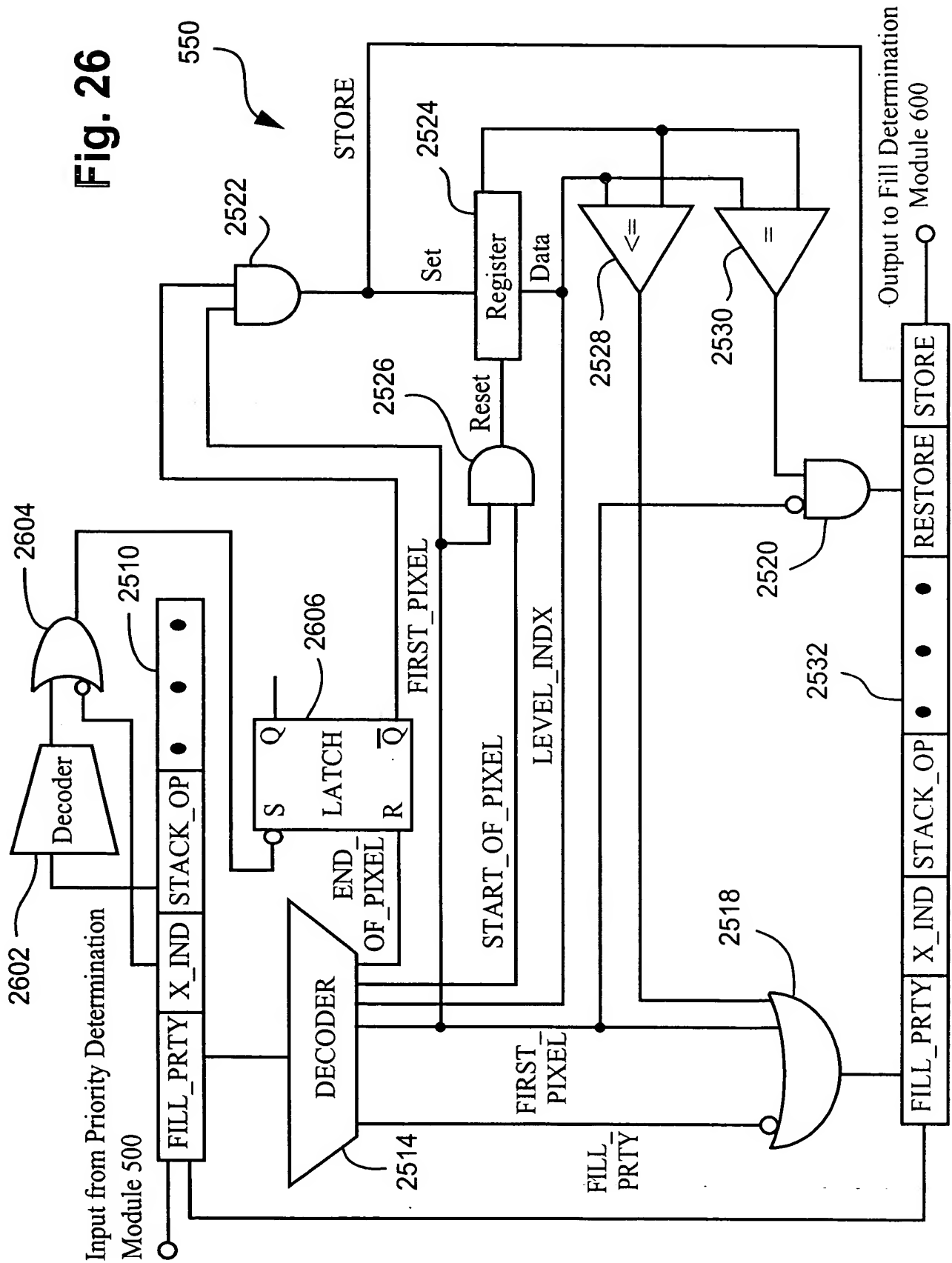


Fig. 23B







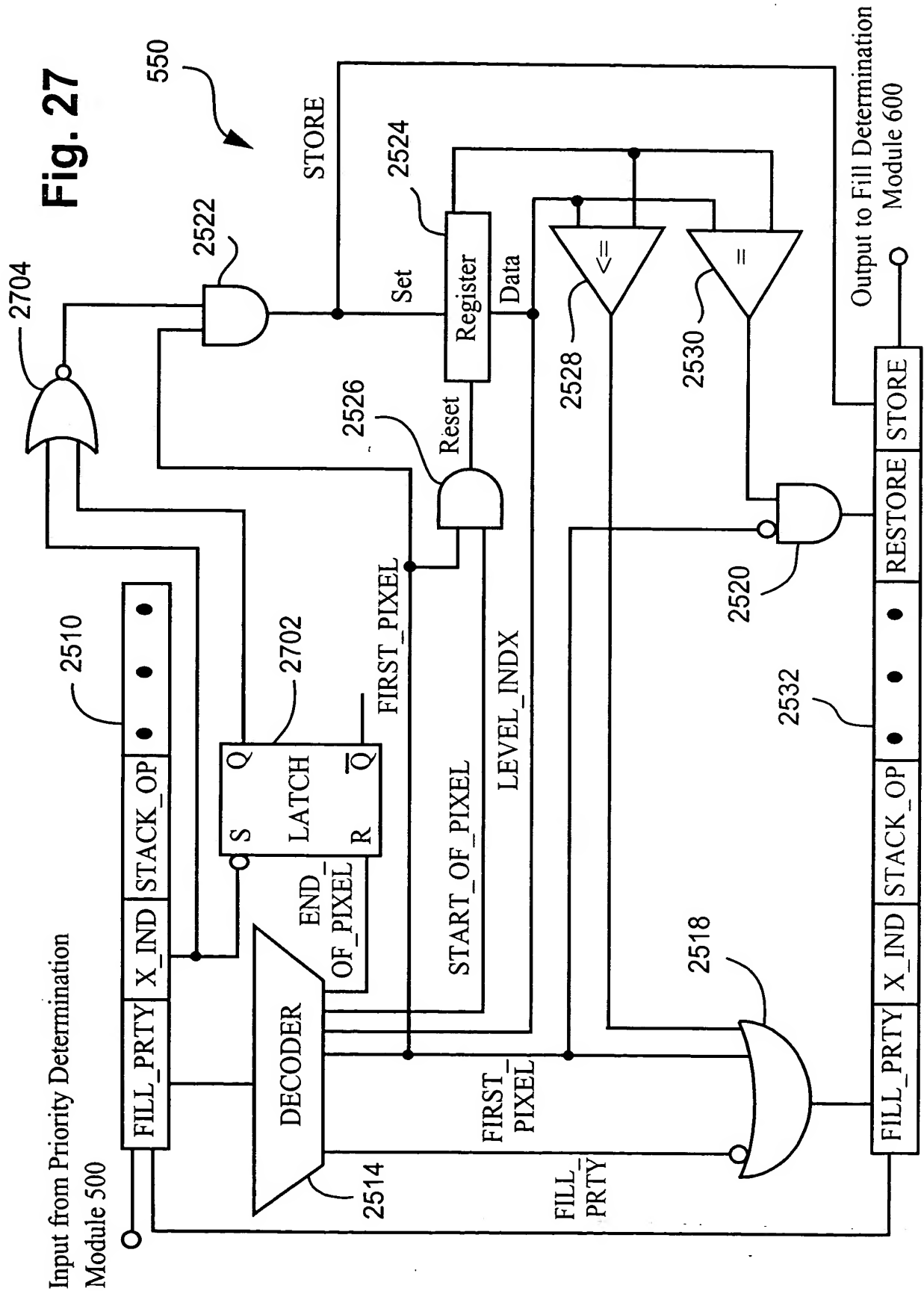
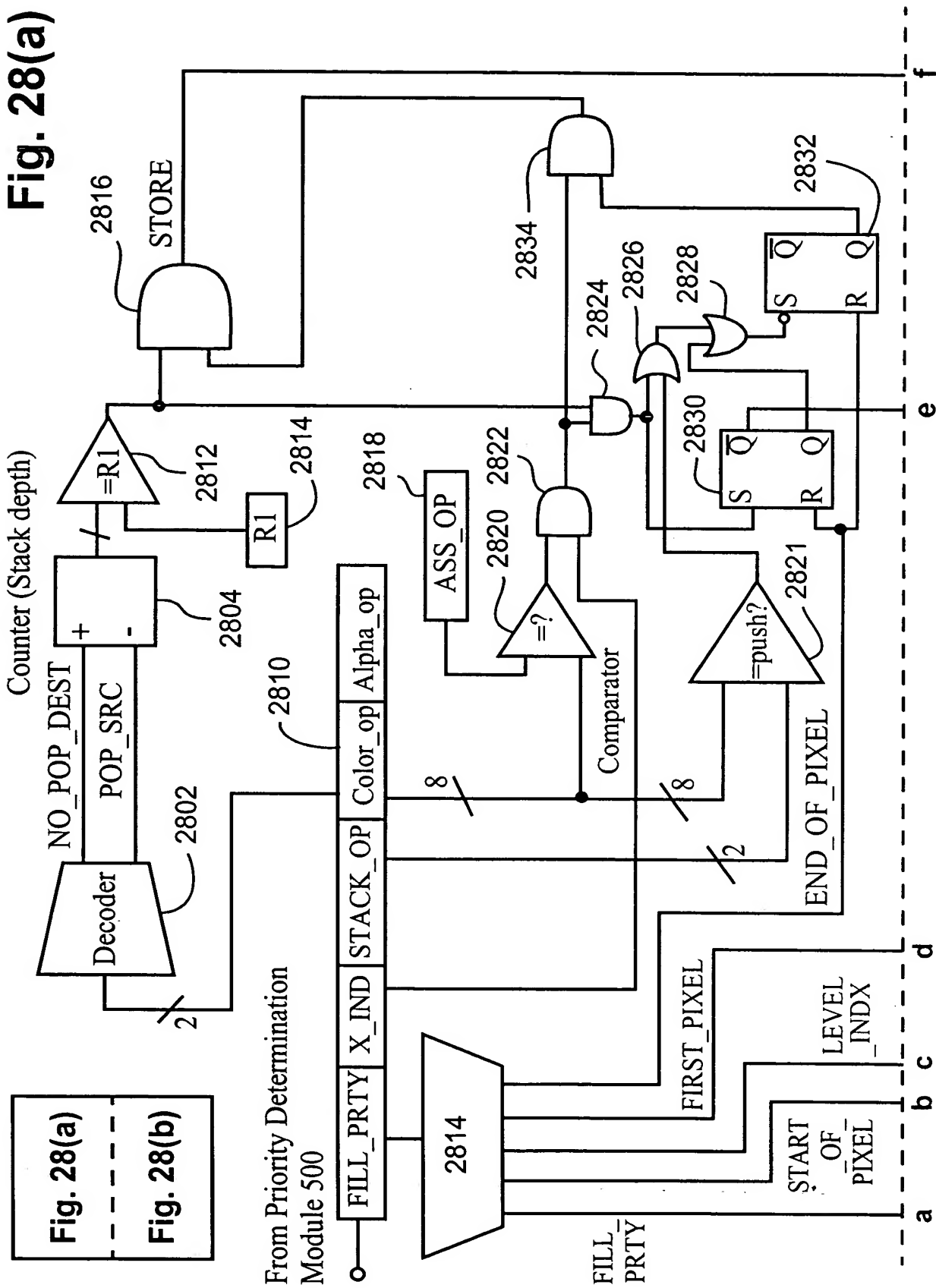
**Fig. 27**

Fig. 28(a)



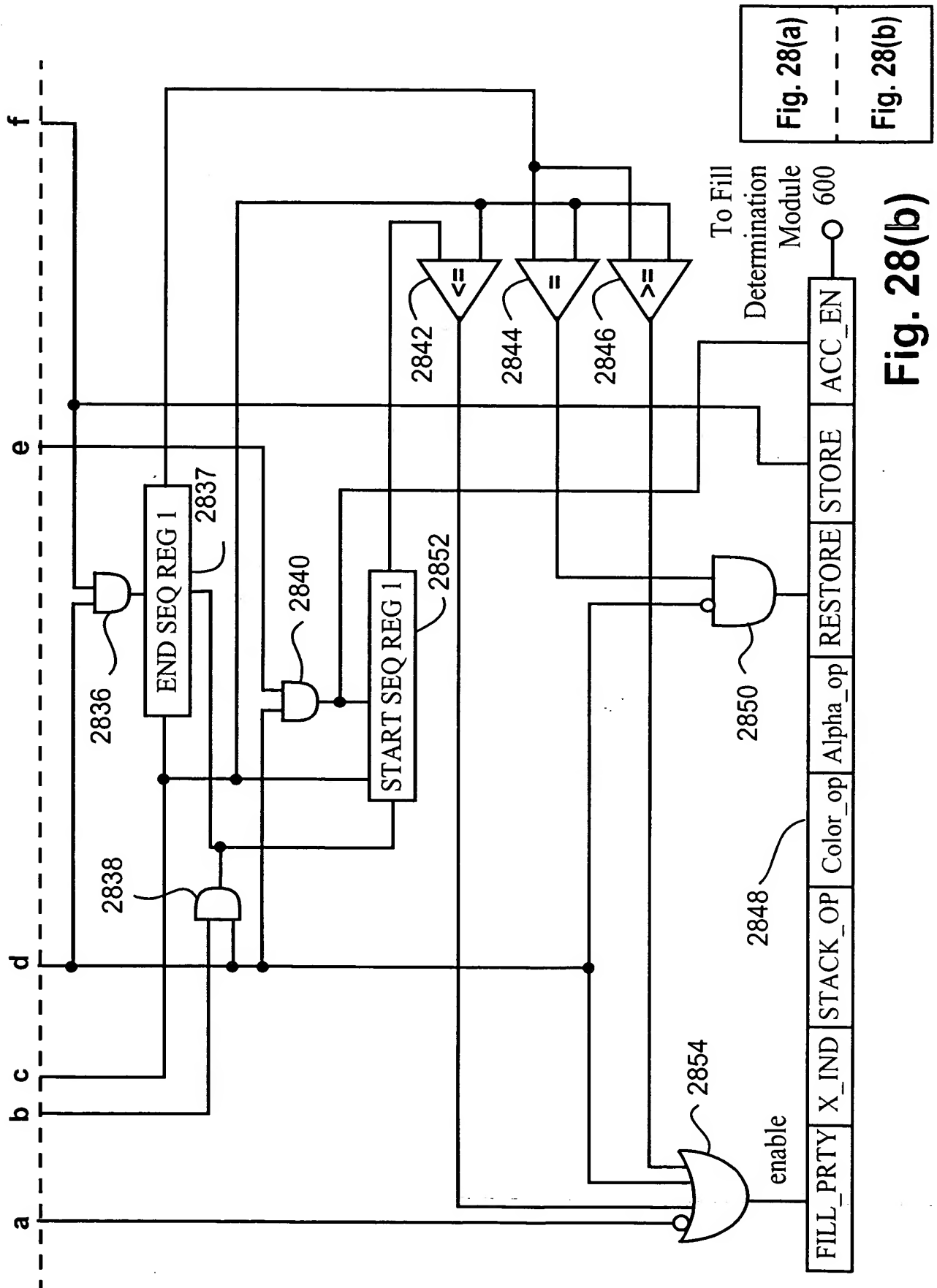
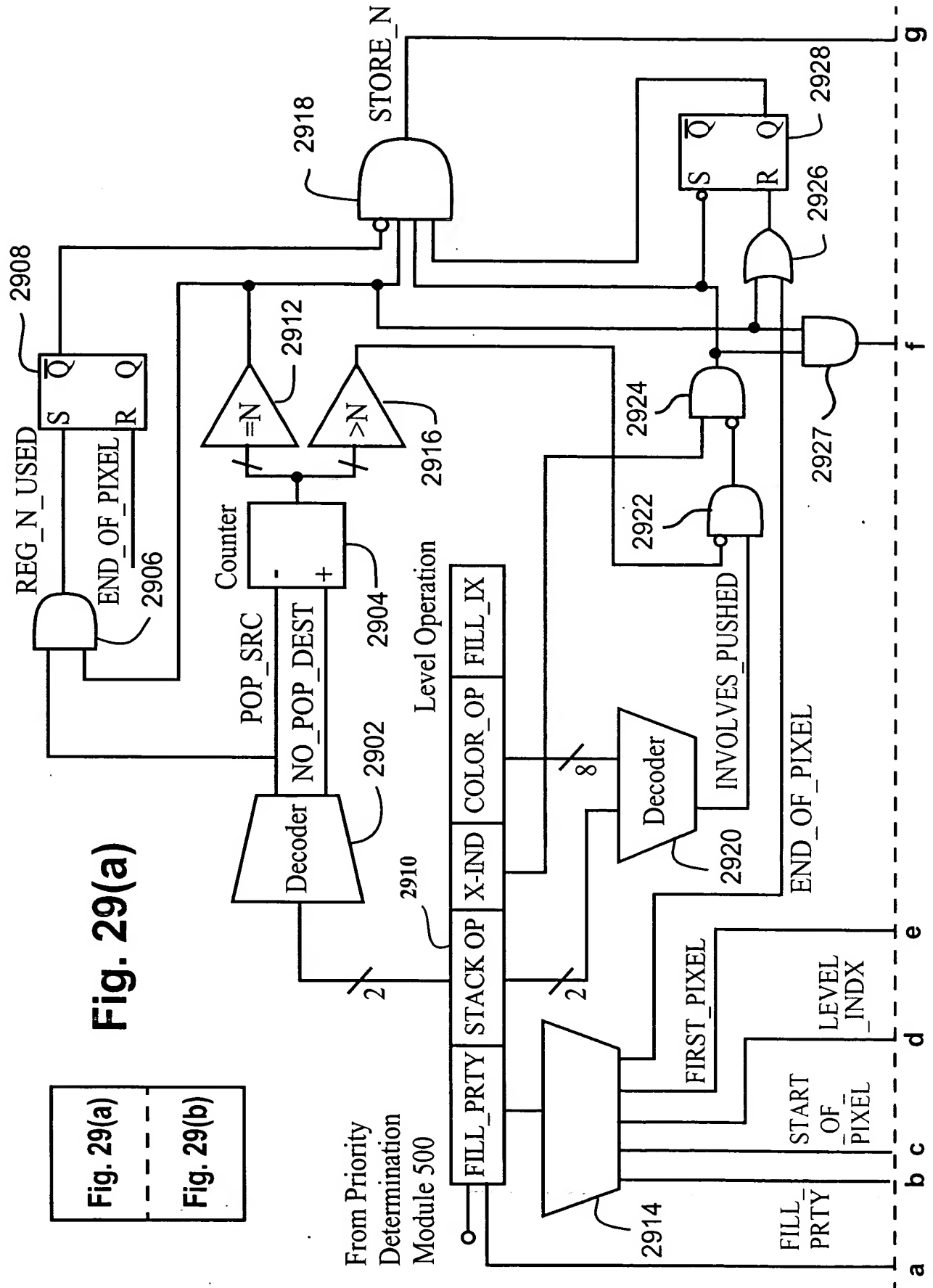


Fig. 28(b)

Fig. 29(a)  
-----  
Fig. 29(b)





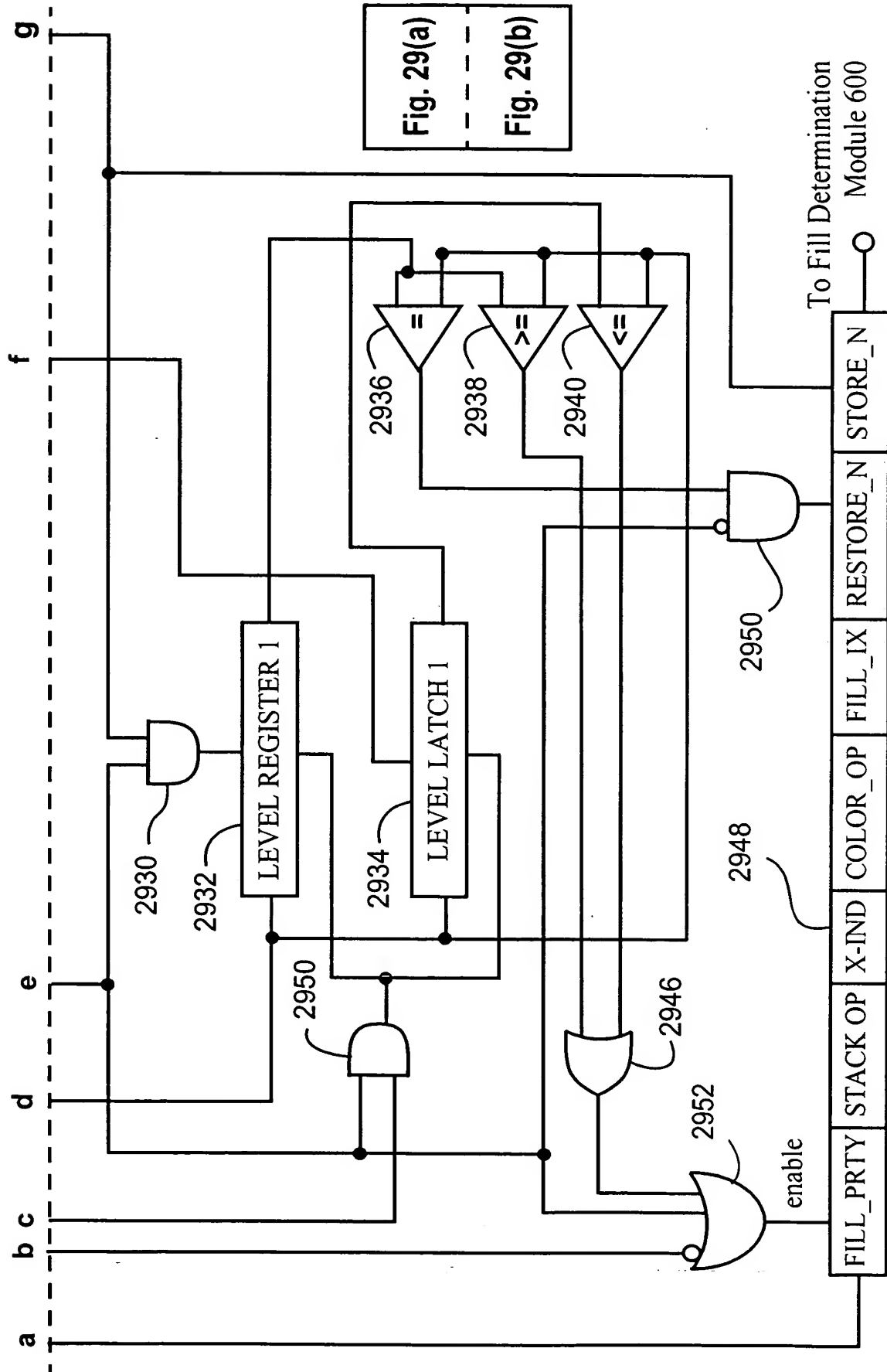


Fig. 29(b)

Original Stream (first pixel)

STACK_OP	LAO_ USE_D_ OUT_S	LAO_ USE_S_ OUT_D	LAO_ USE_S_ ROP_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X_ INDE- PENDENT	FILL INDEX	STORE	RE- STORE
3008 ~ STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3007 ~ POP_SRC	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3006 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3005 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3004 ~ POP_SRC	a	a	a	operation	xxx	xx	1	xxxxx	1	0
3003 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3002 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3001 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	1	0

Fig. 30A

Optimised Stream (subsequent pixels)

STACK_OP	LAO USE_D_ OUT_S	LAO USE_S_ OUT_D	LAO USE_S_ ROP_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X_ INDE- PENDENT	FILL INDEX	STORE	RE- STORE
3008 ~ STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3007 ~ POP_SRC	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3006 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3005 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3004 ~ POP_SRC	a	a	a	operation	xxx	xx	1	xxxxx	0	1

**Fig. 30B**

Original Stream (first pixel)

3108 ~	STD_OP	LAO_ USE_D_ OUT_S	LAO_ USE_S_ OUT_D	LAO_ USE_S_ ROP_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X_ INDE- PENDENT	FILL INDEX	STORE	RE- STORE
3107 ~	POP_SRC	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3106 ~	STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3105 ~	NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3104 ~	POP_SRC	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3103 ~	NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3102 ~	STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	1	0
3101 ~	STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	1	0

Fig. 31A

Optimised Stream (subsequent pixels)

STACK_OP	LAO_D_OUT_S	LAO_USE_S_OUT_D	LAO_USE_S_ROP_D	COLOR_OP	ATTRIBUTES	FILL_TYPE	X_INDEPENDENT	FILL_INDEX	STORE	RE-STORE
3108 ~ STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3107 ~ POP_SRC	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3106 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3105 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3104 ~ POP_SRC	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3103 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3102 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	1

Fig. 31B

Original Stream (first pixel)

STACK_OP	LAO USE_D_ OUT_S	LAO USE_S_ OUT_D	LAO USE_S_ ROP_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X_ INDE- PENDENT	FILL INDEX	STORE	RE- STORE
3208 ~ STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0
3207 ~ POP_SRC	a	a	a	operation	xxx	xx	0	xxxxx	1	0
3206 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3205 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3204 ~ POP_SRC	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3203 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3202 ~ NO_POP_DEST	a	a	a	operation	xxx	xx	1	xxxxx	0	0
3201 ~ STD_OP	a	a	a	operation	xxx	xx	1	xxxxx	0	0

Fig. 32A

Optimised Stream (subsequent pixels)

STACK_OP	LAO_D USE_D_OUT_S	LAO_S USE_S_OUT_D	LAO_S USE_S_OUT_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X_ INDE- PENDENT	FILL INDEX	STORE	RE- STORE
STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0
POP_SRC	a	a	a	operation	xxx	xx	0	xxxxx	0	1

3208 ~

3207 ~

Fig. 32B

Original Stream (first pixel)

STACK_OP	LAO_USE_D_OUT_S	LAO_USE_S_OUT_D	LAO_USE_S_ROP_D	COLOR_OP	ATTRIBUTES	FILL_TYPE	X_INDEPENDENT	FILL_INDEX	RE-STORE	STORE	ACC_EN
3308 ~ STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0	0
3307 ~ POP_SRC	a	a	a	ASS_OP	xxx	xx	1	xxxxx	0	1	1
3306 ~ STD_OP	a	a	a	ASS_OP	xxx	xx	1	xxxxx	0	0	1
3305 ~ NO_POP_DEST	0	1	1	lco_copypen	xxx	xx	1	xxxxx	0	0	1
3304 ~ STD_OP	a	a	a	ASS_OP	xxx	xx	1	xxxxx	0	1	1
3303 ~ STD_OP	a	a	a	ASS_OP	xxx	xx	1	xxxxx	0	1	1
3302 ~ STD_OP	a	a	a	ASS_OP	xxx	xx	1	xxxxx	0	1	1
3301 ~ STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0	0

Fig. 33A



Optimised Stream (subsequent pixels)

STACK_OP	LAO_USE_D_OUT_S	LAO_USE_S_OUT_D	LAO_USE_S_OUT_D	COLOR_OP	ATTRIBUTES	FILL_TYPE	X_INDEPENDENT	FILL_INDEX	RE-STORE	STORE	ACC_EN
STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0	0
STD_OP	a	a	a	ASS_OP	xxx	xx	1	xxxxx	1	0	0
STD_OP	a	a	a	operation	xxx	xx	0	xxxxx	0	0	0

3308

3307

3301

Fig. 33B

Original Stream (first pixel)

STACK_OP	LAO_D- USE_D- OUT_S	LAO_S- USE_S- OUT_D	LAO_S- USE_S- ROP_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X INDE- PENDENT	FILL INDEX	STORE _0	STORE _1	STORE _2
3410 ~ STD_OP	a	a	a	op7	xxx	xx	0	xxxxx	0	0	0
3409 ~ POP_SRC	a	a	a	op6	xxx	xx	1	xxxxx	0	0	0
3408 ~ POP_SRC	a	a	a	op5	xxx	xx	1	xxxxx	0	1	0
3407 ~ NO_POP_ DEST	a	a	a	lco_nop	xxx	xx	1	xxxxx	0	0	0
3406 ~ STD_OP	a	a	a	op4	xxx	xx	1	xxxxx	0	1	0
3405 ~ STD_OP	a	a	a	op3	xxx	xx	1	xxxxx	0	1	0
3404 ~ NO_POP_ DEST	a	a	a	lco_ copypen	xxx	xx	1	xxxxx	0	1	0
3403 ~ STD_OP	a	a	a	op2	xxx	xx	0	xxxxx	0	0	0
3402 ~ STD_OP	a	a	a	op1	xxx	xx	1	xxxxx	1	0	0
3401 ~ STD_OP	a	a	a	op0	xxx	xx	1	xxxxx	1	0	0

Fig. 34A

Optimised Stream (subsequent pixels)

STACK_OP	LAO_ USE_D_ OUT_S	LAO_ USE_S_ OUT_D	LAO_ USE_S_ ROP_D	COLOR _OP	ATTRI- BUTES	FILL TYPE	X_ INDE- PENDENT	FILL INDEX	RE- STORE _0	RE- STORE _1	RE- STORE _3
3410 ~ STD_OP	a	a	a	op7	xxx	xx	0	xxxxx	0	0	0
3409 ~ POP_SRC	a	a	a	op6	xxx	xx	1	xxxxx	0	0	0
3408 ~ POP_SRC	a	a	a	op5	xxx	xx	1	xxxxx	0	1	0
3403 ~ STD_OP	a	a	a	op2	xxx	xx	0	xxxxx	0	0	0
3402 ~ STD_OP	a	a	a	op1	xxx	xx	1	xxxxx	1	0	0

Fig. 34B